Nokia Customer Care
RH-37 Series Transceivers

3 - Service Software and Tuning Instructions

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Quick Guide for Phoenix Service SW Installation

Phoenix Installation Steps in Brief

DCT-4 generation Test and Service Software is called "Phoenix".

These are the basic steps to install Phoenix:

- Connect a DK2 Dongle or FLS-4S POS Flash Device.
- Install the Phoenix Service SW.
- Install the Data Package for Phoenix.
- Configure users.
- Manage connection settings (depends on the tools you are using).

Phoenix is now ready for FLS-4S Point Of Sales Flash Device use.

If you use FPS-8:

- Update FPS-8 SW.
- Activate FPS-8.
- Update JBV-1 Docking Station SW (only when needed).

Phoenix is now ready to be used also with FPS-8 flash prommer and other tools.

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The Phoenix Service Software installation contains:

- service software support for all phone models included in the package
- flash update package files for FPS-8* and FLS-4S programming devices
- all needed drivers for: DK2 dongle
  FLS-4S point of sales flash device
  USB devices

Separate installation packages for flash update files and drivers are also available, but it is not necessary to use them unless updates appear between Phoenix Service SW releases. If separate update packages are used, they should be used after Phoenix and data packages have been installed.

The phone model specific data package includes all changing product specific data:

- product software Binary files
- files for type label printing
- validation file for the Faultlog repair data reporting system
- all product specific configuration files for Phoenix software components

Please refer to Service Manual and Technical Bulletins for more information concerning phone model specific service tools and equipment setup.

Phoenix Service SW and phone data packages should only be used as complete installation packages. Uninstallation should be made from Windows Control Panel.

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Phoenix Service SW

Before installation

- Check that a dongle is attached to the parallel port of your computer .
- Download the installation package (e.g. *phoenix_service_sw_a12_2003_50_6_35.exe*) to your computer (e.g. C:\TEMP).
- Close all other programs.
- Run the application file (e.g. *phoenix_service_sw_a12_2003_50_6_35.exe*) and follow instructions on the screen.

Administrator rights may be required to be able to install Phoenix depending on the Operating System

If uninstalling or rebooting is needed at any point, you will be prompted by the Install Shield program.

If at any point during installation you get this message, the dongle is not found and installation cannot continue.

Possible reasons may be defective or too old PKD-1Dongle (five digit serial number dongle when used with FPS-8 Prommer) or that the **FLS-4S** POS Flash Dongle is defective or power to it is not supplied by external charger.

First, check the COM /parallel ports used! After correcting the problem, the installation can be restarted.

Dongle not found
Insert Nokia dongle and click Retry to re-detect the dongle or click Cancel to exit the installation.
Retry
Cancel

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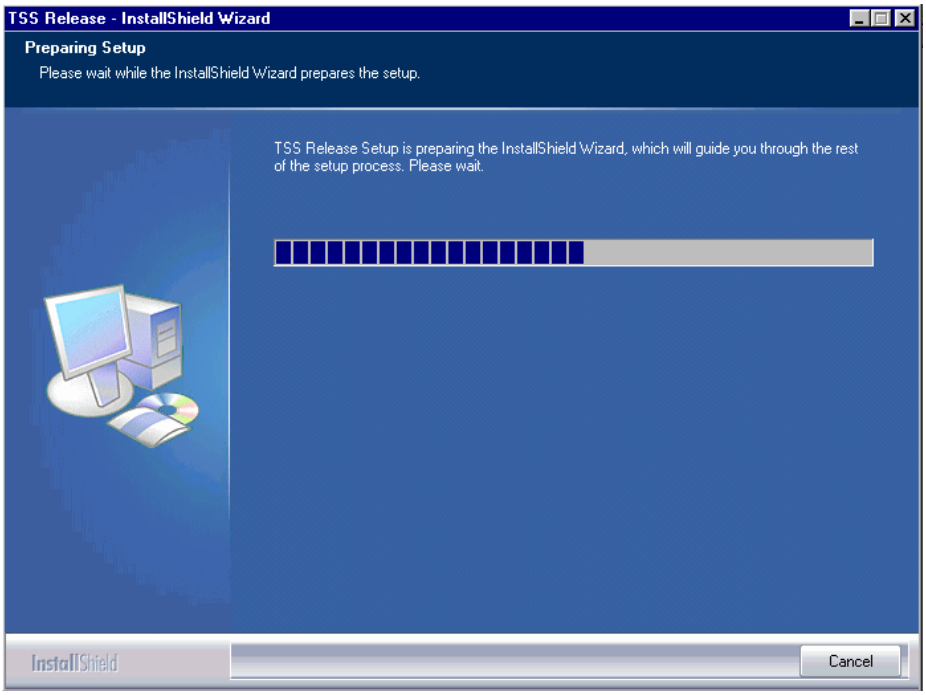
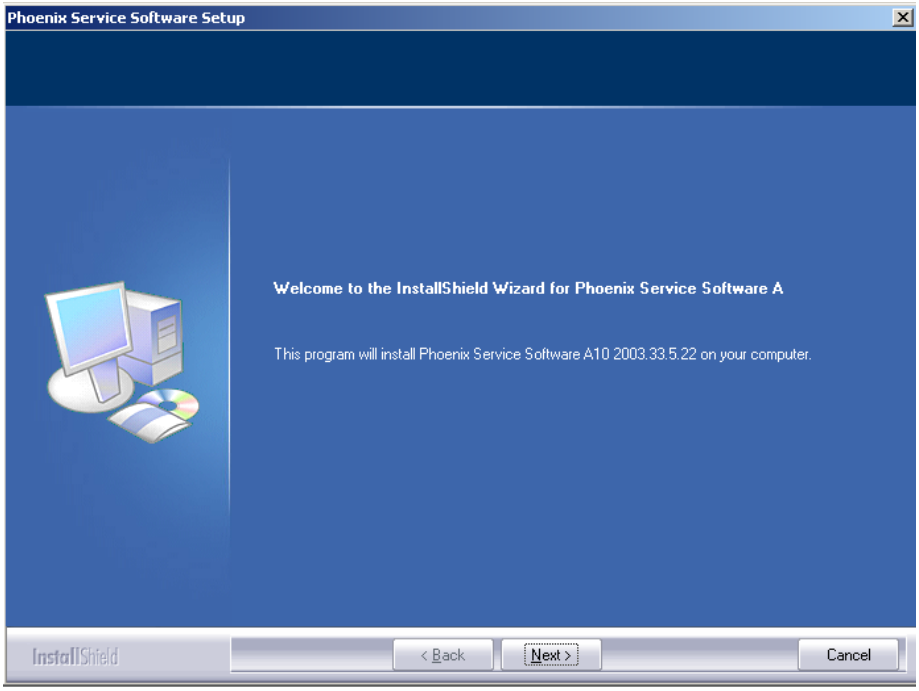
Installing Phoenix

Run the *phoenix_service_sw_a12_2003_50_6_35.exe* to start the installation. Install Shield will prepare.


TSS Release - InstallShield Wizard
Preparing Setup
Please wait while the InstallShield Wizard prepares the setup.
TSS Release Setup is preparing the InstallShield Wizard, which will guide you through the rest of the setup process. Please wait.
InstallShield
Cancel

To continue, click "Next" in the Welcome dialog.


Phoenix Service Software Setup
Welcome to the InstallShield Wizard for Phoenix Service Software A
This program will install Phoenix Service Software A10 2003.33.5.22 on your computer.
InstallShield
< Back
Next >
Cancel

Choose the destination folder, it is recommended to use the default folder *C:\Program-Files\Nokia\Phoenix*.

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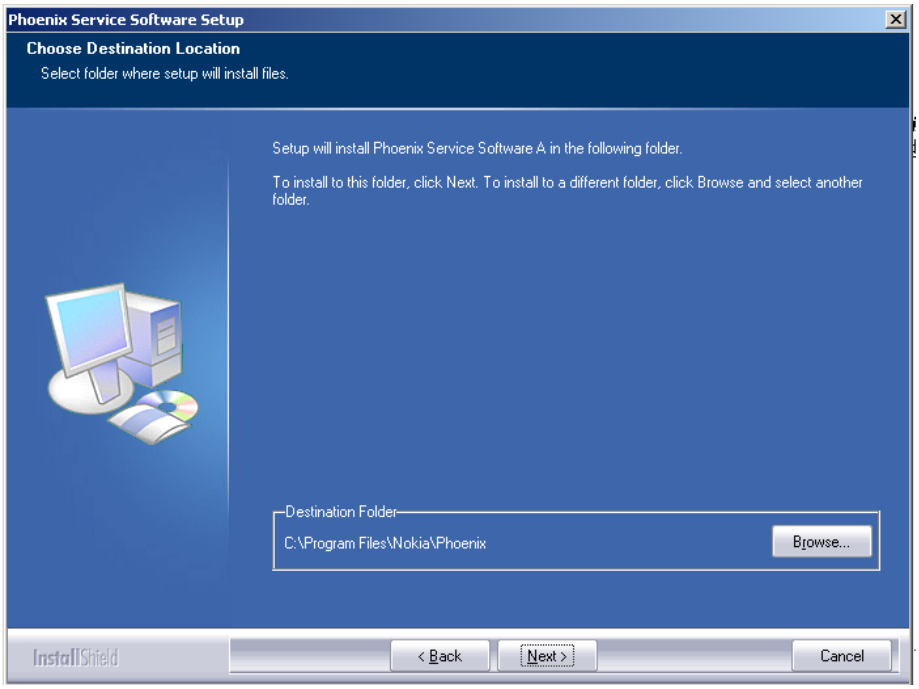
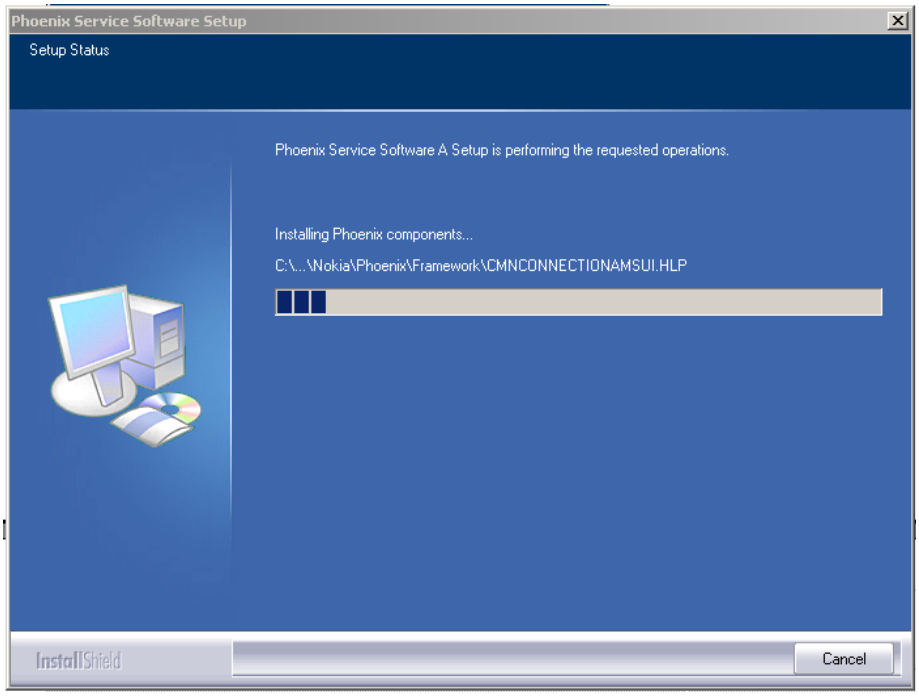
Choose "Next" to continue. You may choose another location by selecting "Browse" (not recommended).


Phoenix Service Software Setup
Choose Destination Location
Select folder where setup will install files.
Setup will install Phoenix Service Software A in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Program Files\Nokia\Phoenix
Browse...
InstallShield
< Back
Next >
Cancel

Setup copies the components, progress of the setup is shown. Please wait...



Drivers are installed and updated, please wait. The process may take several minutes to complete.

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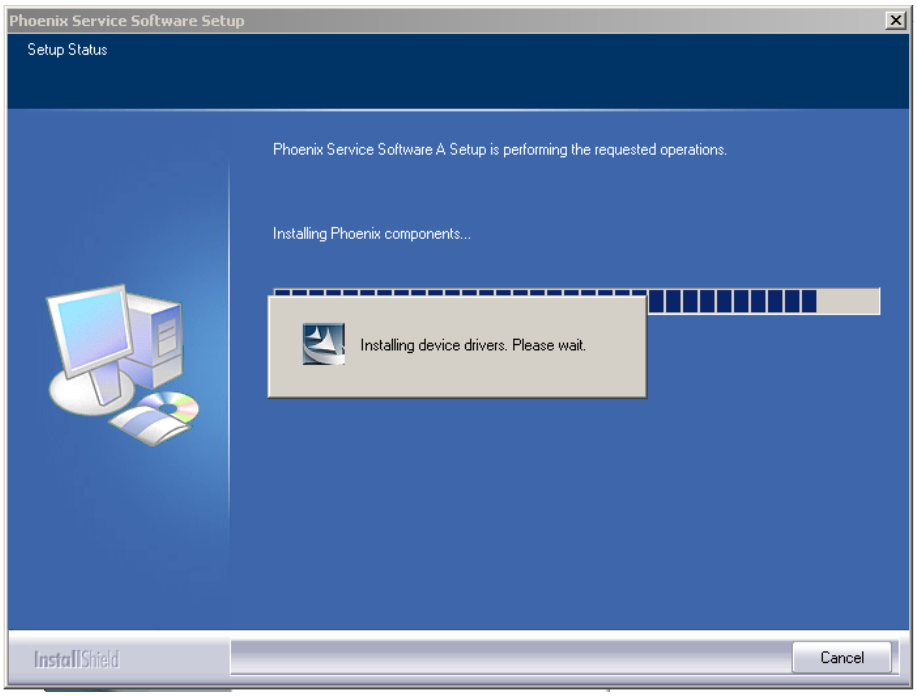
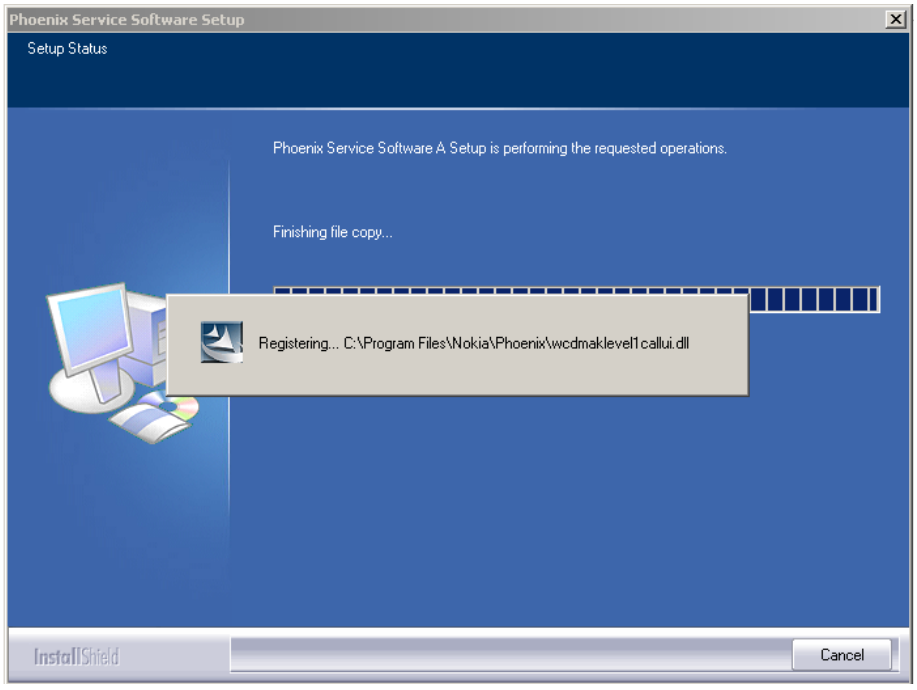


If the operating system does not require rebooting (Windows 2000, XP), the PC components are registered straight away.



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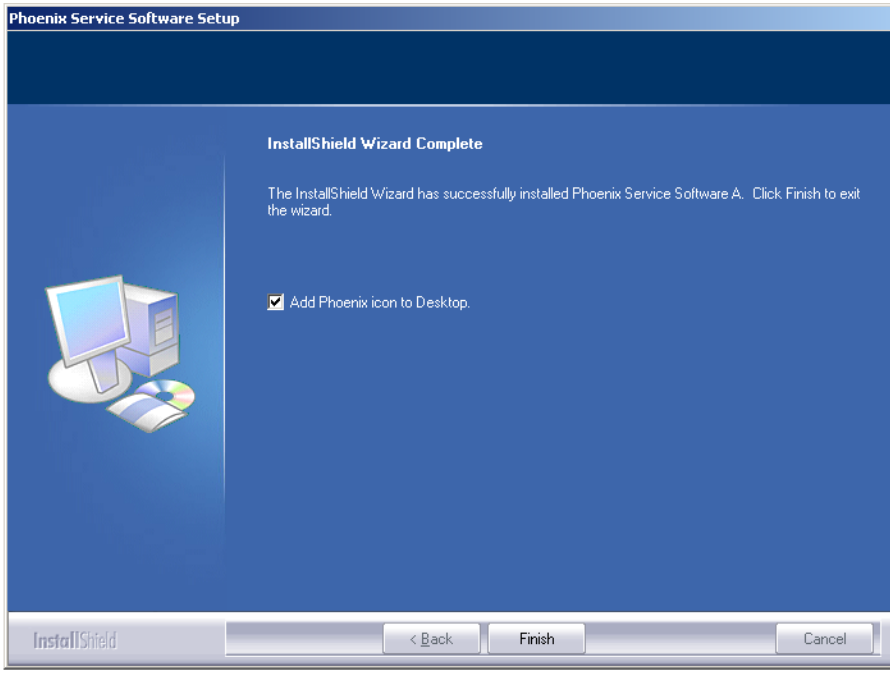
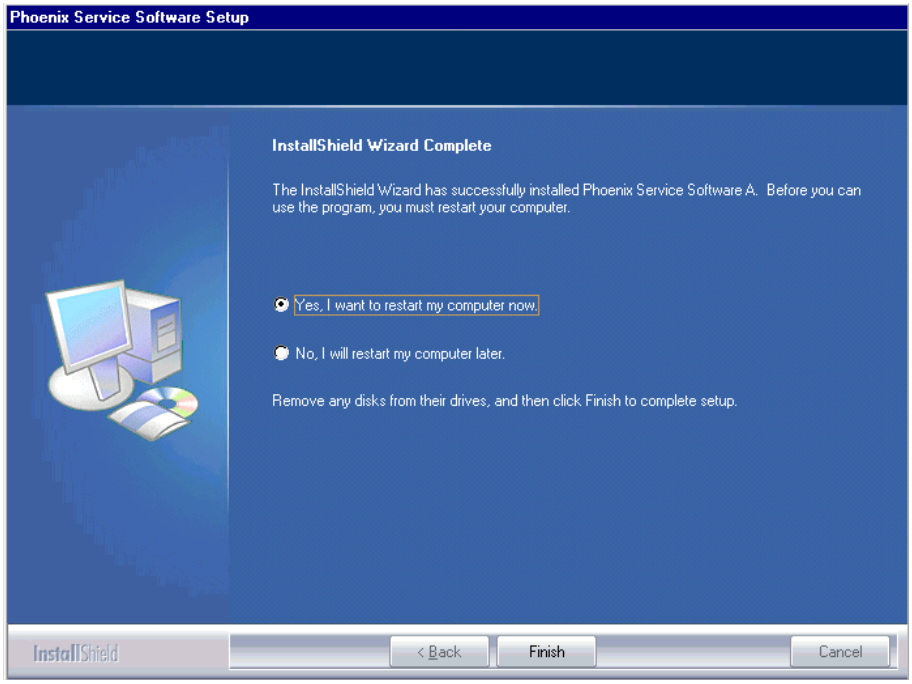
Click "Finish" to finalize. Phoenix is ready for use.


Phoenix Service Software Setup
InstallShield Wizard Complete
The InstallShield Wizard has successfully installed Phoenix Service Software A. Click Finish to exit the wizard.
Add Phoenix icon to Desktop.
InstallShield
< Back
Finish
Cancel

If the operating system used requires restarting your computer (Windows 98, SE, ME), the Install Shield Wizard notifies you about it. Select "Yes..." to reboot the PC immediately and "No..." to reboot the PC manually afterwards.


Phoenix Service Software Setup
InstallShield Wizard Complete
The InstallShield Wizard has successfully installed Phoenix Service Software A. Before you can use the program, you must restart your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
InstallShield
< Back
Finish
Cancel

After the reboot components are registered and Phoenix is ready for use. Note that Phoenix doesn't work, if components are not registered.

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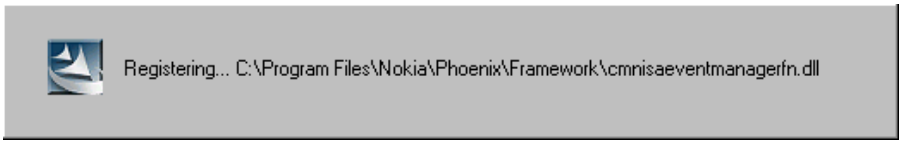

Now the installation of Phoenix Service SW is ready and it can be used after:

- installing phone model specific Phone Data Package for Phoenix
- configuring users and connections

FLS-4S can be used right away.

FPS-8* can be used after updating Flash Update Package files to it .

Updating Phoenix installation

If you already have the Phoenix Service SW installed on your computer, sooner or later there will be need to update it when new versions are released.

Always use the latest available versions of both the Phoenix Service SW and the Phone Specific Data Package. Instructions can be found in phone model specific Technical Bulletins and Phone Data package readme.txt files (shown during installation).

To update Phoenix, you need to take exactly the same steps as when installing it for the first time.

- Download the installation package to your computer hard disk.
- Close all other programs.
- Run the application file (e.g. *phoenix_service_sw_a12_2003_50_6_35.exe*).

A newer version of Phoenix will be installed.

Driver versions will be checked and if need be, updated.

When you update Phoenix from an old to a new version (e.g. *a11_2003_41_5_28* to *a12_2003_50_6_35*), the update will take place automatically without uninstallation.

If you try to update Phoenix with the same version that you already have (e.g. *a12_2003_50_6_35* to *a12_2003_50_6_35*), you are asked if you want to uninstall the version of Phoenix you have on your PC. In this case, you can choose between total uninstallation and repair, just like when you choose to uninstall Phoenix service software from the Windows control panel.

If you try to install an older version (e.g. downgrade from *a12_2003_50_6_35* to

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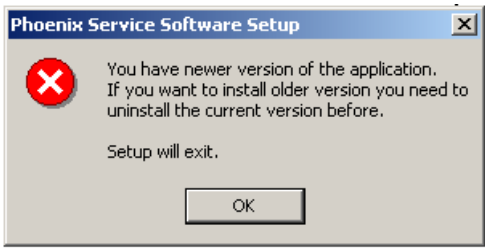
a11_2003_41_5_28) the installation will be interrupted.


Phoenix Service Software Setup
You have newer version of the application.
If you want to install older version you need to uninstall the current version before.
Setup will exit.
OK

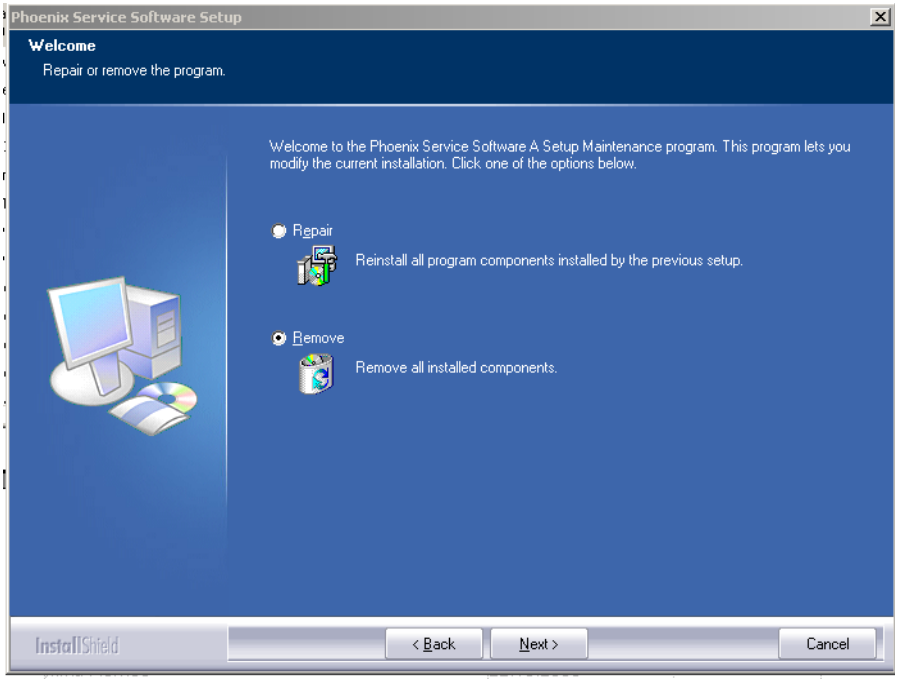
Please always follow the instructions on the screen.

Uninstalling Phoenix

Uninstallation can be done manually from Windows Control Panel - Add / Remove Programs.

Choose "Phoenix Service Software" and click "Add/Remove".

Choose "Remove" to uninstall Phoenix.


Phoenix Service Software Setup
Welcome
Repair or remove the program.
Welcome to the Phoenix Service Software A Setup Maintenance program. This program lets you modify the current installation. Click one of the options below.
Repair
Reinstall all program components installed by the previous setup.
Remove
Remove all installed components.
InstallShield
< Back
Next >
Cancel

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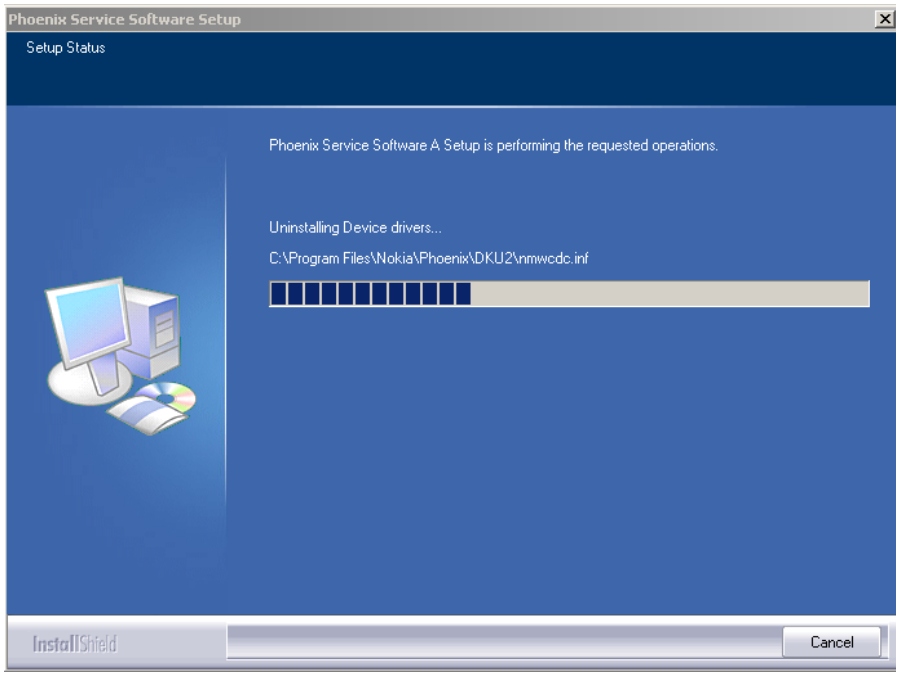
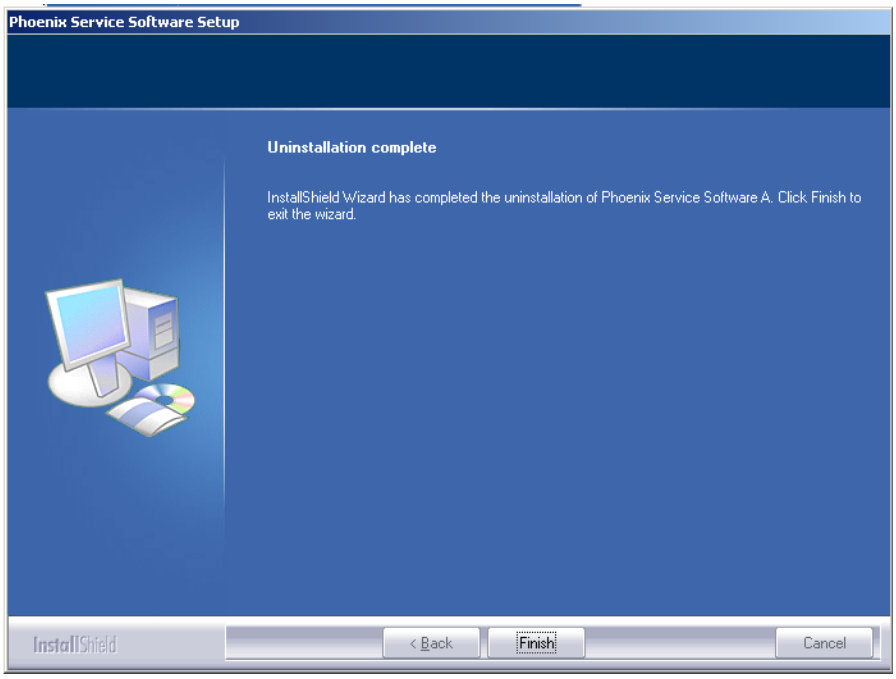
Progress of the uninstallation is shown.



If the operating system does not require rebooting, select "Finish" to complete.


Phoenix Service Software Setup
Uninstallation complete
InstallShield Wizard has completed the uninstallation of Phoenix Service Software A. Click Finish to exit the wizard.
InstallShield
< Back
Finish
Cancel

If the operating system requires rebooting, Install Shield Wizard notifies you about it. Select "Yes..." to reboot the PC immediately and "No..." to reboot the PC manually afterwards.

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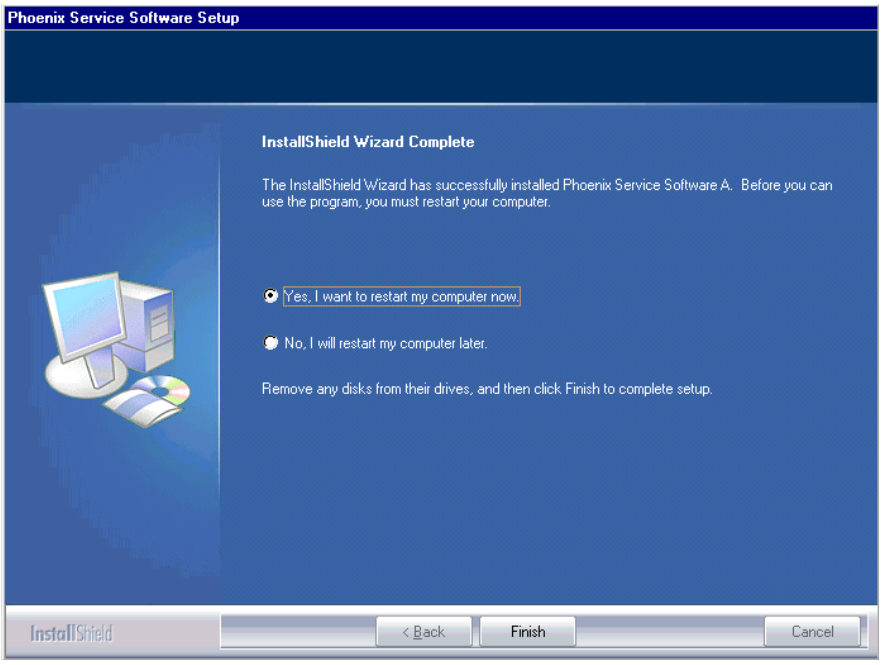
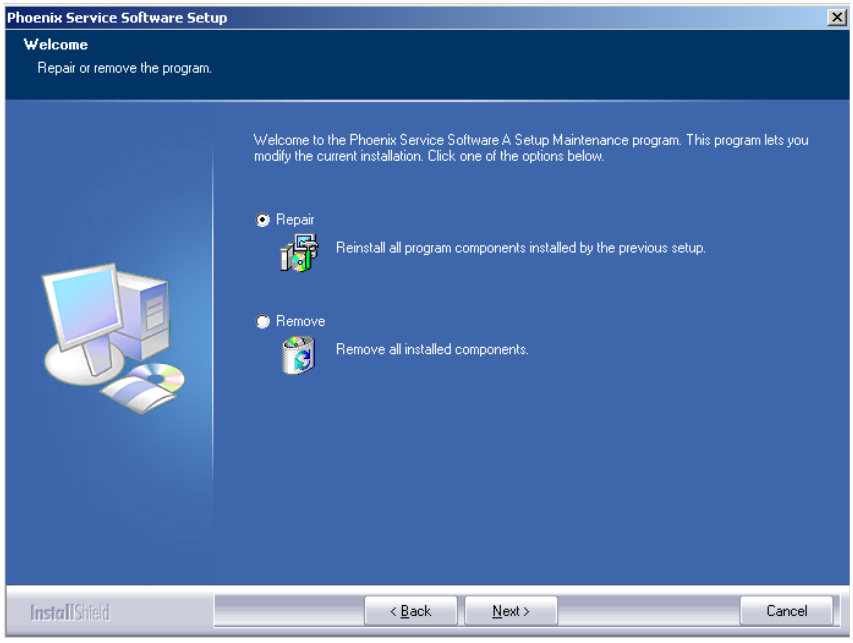

Phoenix Service Software Setup
InstallShield Wizard Complete
The InstallShield Wizard has successfully installed Phoenix Service Software A. Before you can use the program, you must restart your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
InstallShield
< Back
Finish
Cancel

Repair

If you experience any problems with the service software or suspect that files have been lost, you can use the repair function before completely reinstalling Phoenix. Note that the original installation package (e.g. *phoenix_service_sw_a12_2003_50_6_35.exe*) must be found on your PC when you run the repair setup.

Run Windows Control Panel - Add / Remove Programs, choose "Phoenix Service Software".

Click "Add/Remove". In the following view, choose "Repair".


Phoenix Service Software Setup
Welcome
Repair or remove the program.
Welcome to the Phoenix Service Software A Setup Maintenance program. This program lets you modify the current installation. Click one of the options below.
Repair
Reinstall all program components installed by the previous setup.
Remove
Remove all installed components.
InstallShield
< Back
Next >
Cancel

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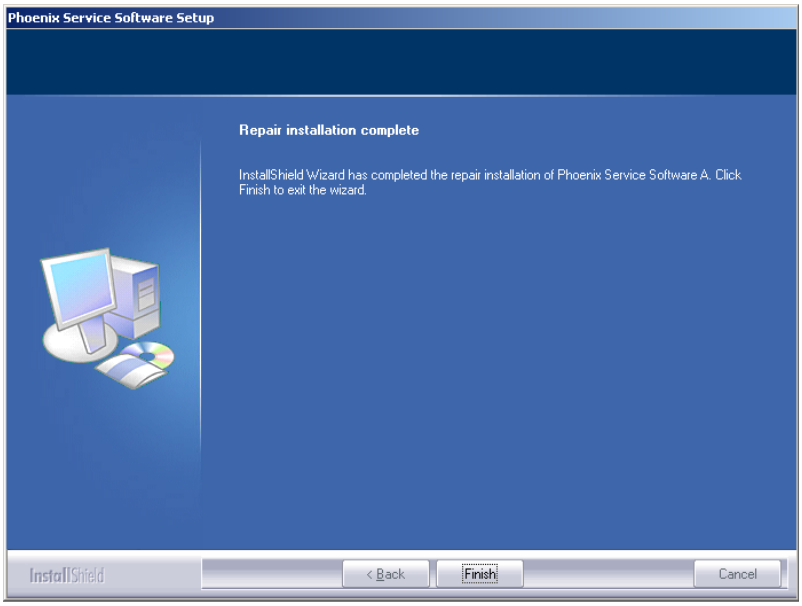
Phoenix reinstalls the required components and registers them, the procedure is the same as in the update installation.

To complete, choose “Finish” .


Phoenix Service Software Setup
Repair installation complete
InstallShield Wizard has completed the repair installation of Phoenix Service Software A. Click Finish to exit the wizard.
InstallShield
< Back
Finish
Cancel

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Data Package for Phoenix (Product Specific)

Before installation

Product Data Package contains all product specific data to make the Phoenix Service Software and tools usable with a certain phone model.

Check that the dongle is attached to the parallel port of your computer.

Install Phoenix Service SW.

Download the installation package (e.g. *RH-37_dp_v_0.00_mcuA0.00.0.exe*) to your computer (e.g. C:\TEMP)

Close all other programs.

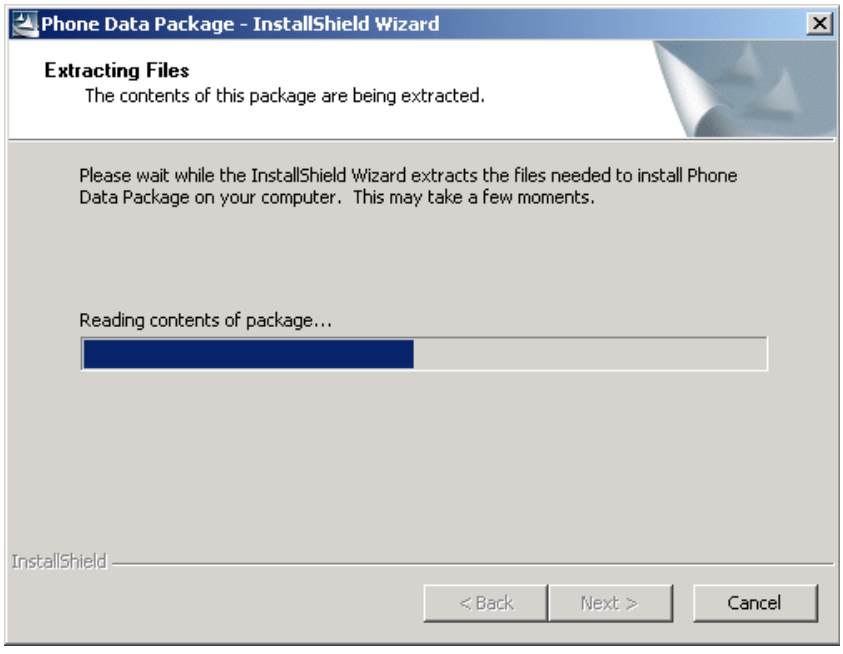
Run the application file (e.g. *RH-37_dp_v_0.00_mcuA0.00.0.exe*) and follow the instructions on the screen.

Please note that very often the Phoenix Service SW and the Phone Specific Data Package for Phoenix come in pairs, meaning that certain version of Phoenix can only be used with certain version of Data Package. Always use the latest available versions of both. Instructions can be found in phone model specific Technical Bulletins and readme.txt files of the data packages.

Installing Phoenix data package (product specific)

Run the *RH-37_dp_v_0.00_mcuA0.00.0.exe* to start installation.

Choose "Next". The files needed for installation will be extracted. Please wait.


Phone Data Package - InstallShield Wizard
Extracting Files
The contents of this package are being extracted.
Please wait while the InstallShield Wizard extracts the files needed to install Phone Data Package on your computer. This may take a few moments.
Reading contents of package...
InstallShield
< Back
Next >
Cancel

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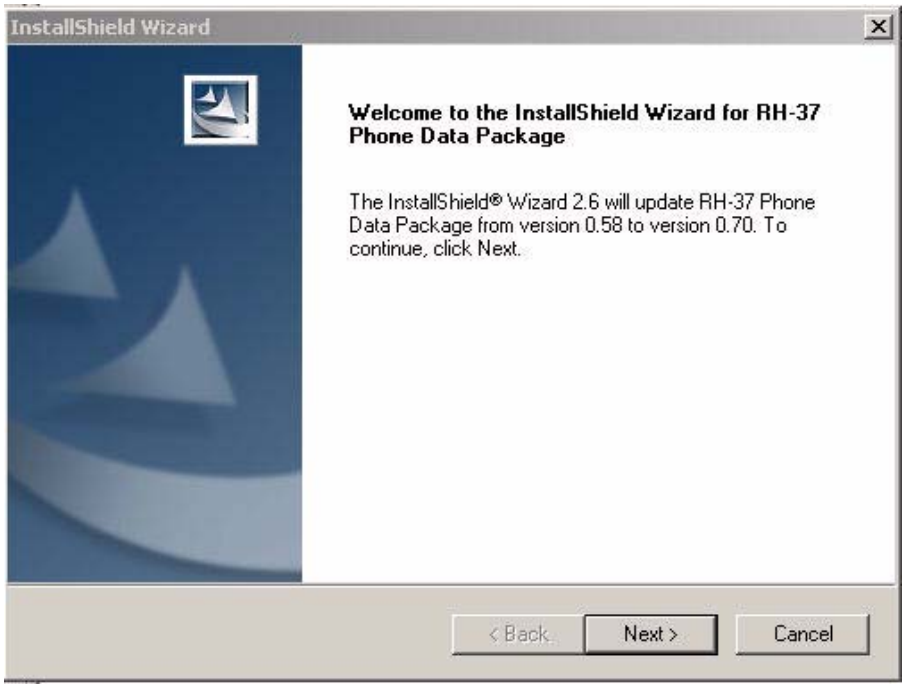
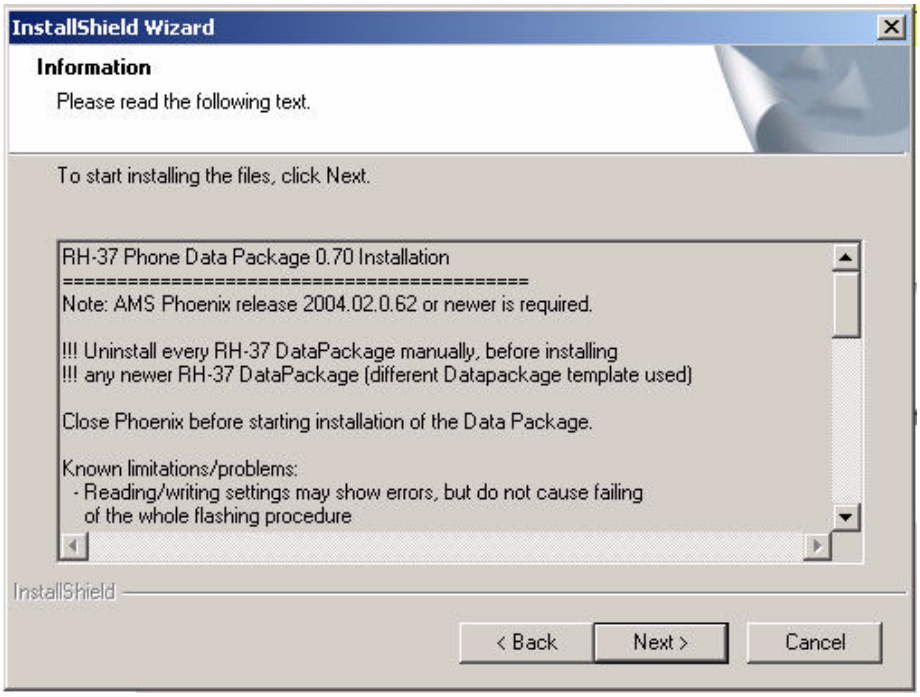
To continue, choose “Next”.


InstallShield Wizard
Welcome to the InstallShield Wizard for RH-37 Phone Data Package
The InstallShield® Wizard 2.6 will update RH-37 Phone Data Package from version 0.58 to version 0.70. To continue, click Next.
< Back
Next >
Cancel

In this view, you can see the contents of the data package. **Read the text carefully**. There should be information about the Phoenix version needed with this data package. Choose “Next”.


InstallShield Wizard
Information
Please read the following text.
To start installing the files, click Next.
RH-37 Phone Data Package 0.70 Installation
==========
Note: AMS Phoenix release 2004.02.0.62 or newer is required.
!!! Uninstall every RH-37 DataPackage manually, before installing
!!! any newer RH-37 DataPackage (different Datapackage template used)
Close Phoenix before starting installation of the Data Package.
Known limitations/problems:
- Reading/writing settings may show errors, but do not cause failing of the whole flashing procedure
InstallShield
< Back
Next >
Cancel

To continue, confirm the location and choose “Next” . Install shield checks where the

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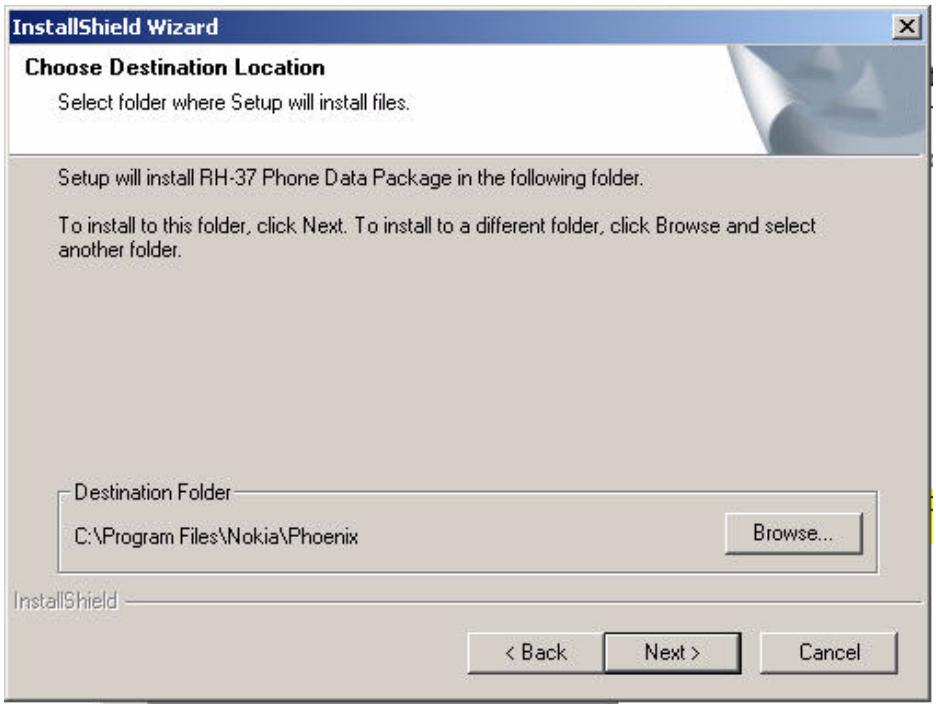
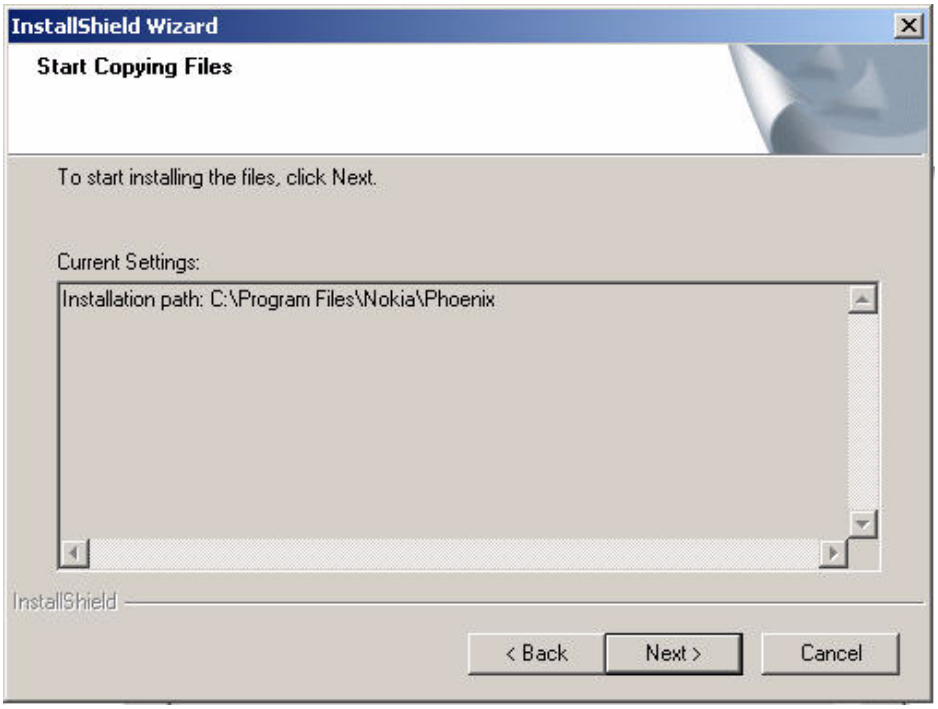
Phoenix application is installed and the directory is shown. Choose "Next" to continue.


InstallShield Wizard
Choose Destination Location
Select folder where Setup will install files.
Setup will install RH-37 Phone Data Package in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Program Files\Nokia\Phoenix
Browse...
InstallShield
< Back
Next >
Cancel

To start copying the files, choose "Next"..



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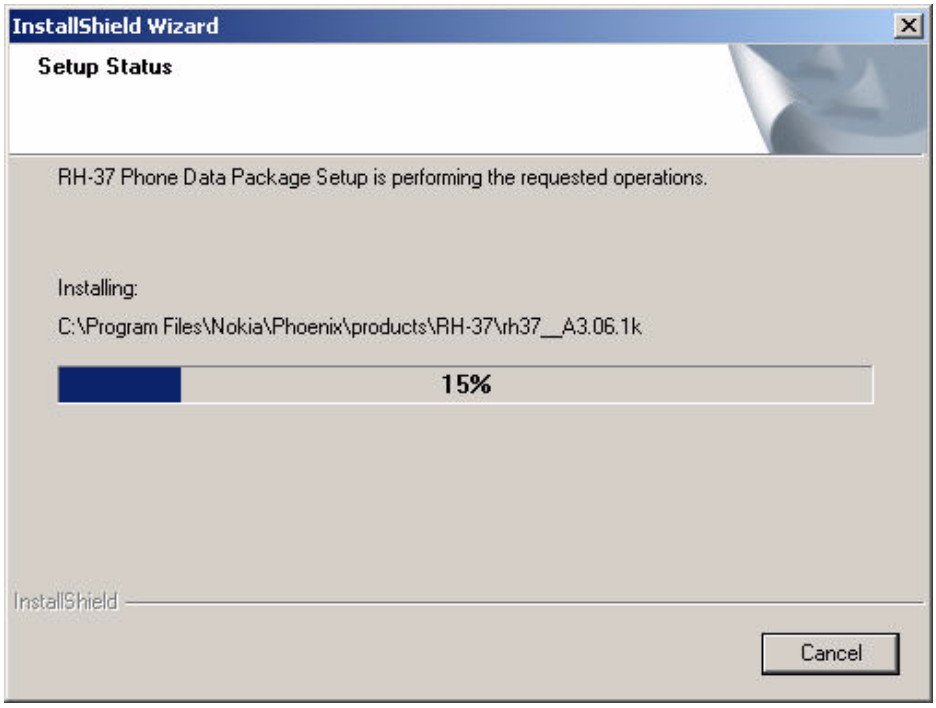
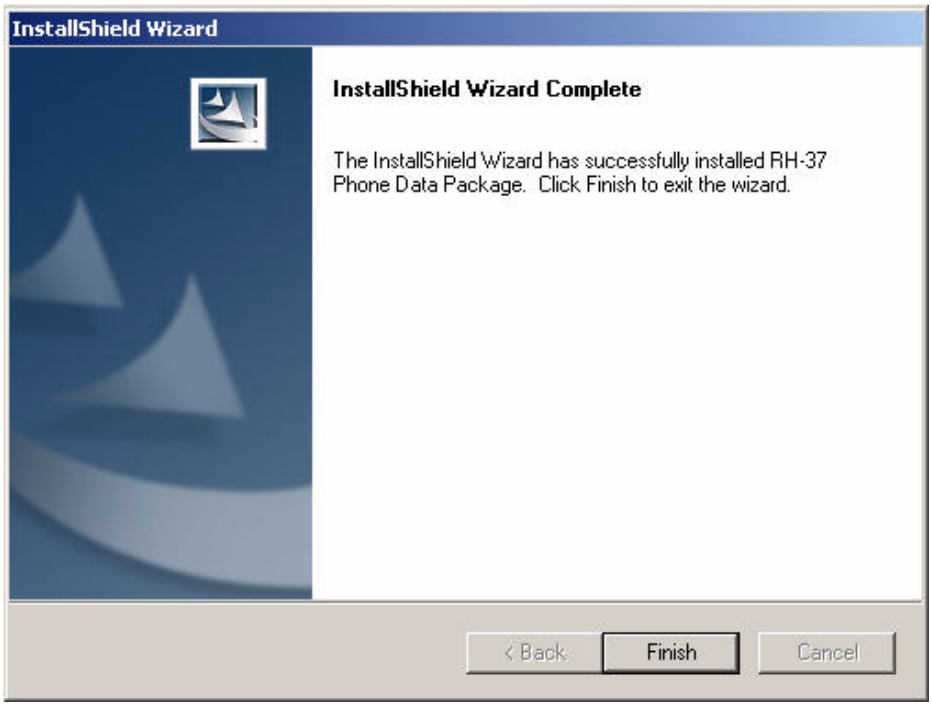
Phone model specific files are installed. Please wait.



To complete installation, choose "Finish".


InstallShield Wizard
InstallShield Wizard Complete
The InstallShield Wizard has successfully installed RH-37 Phone Data Package. Click Finish to exit the wizard.
< Back
Finish
Cancel

You now have all phone model specific files installed in your Phoenix service SW.

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Now Phoenix can be used to for example flash phones and print type labels after:

- configuring users
- managing connections

FLS-4S can be used right away.

FPS-8* can be used after updating flash update package files to it .

Uninstalling the data package

Uninstallation can also be done manually from Windows Control Panel / Add / Remove Programs/ -> RH-37 Phone Data Package.

If you try to install the same version of Phoenix data package that you already have, you are asked if you want to uninstall the current version. Answer "OK" to uninstall, "Cancel" if you do not want to uninstall.

Uninstall RH-37 Phone Data Package
Do you want to completely remove the RH-37 Phone Data Package application and all of its components?
OK
Cancel

Older versions of data packages don't need to be uninstalled unless instructions to do so are given in the readme.txt of the data package and bulletins concerning the release. Please read all related documents carefully.

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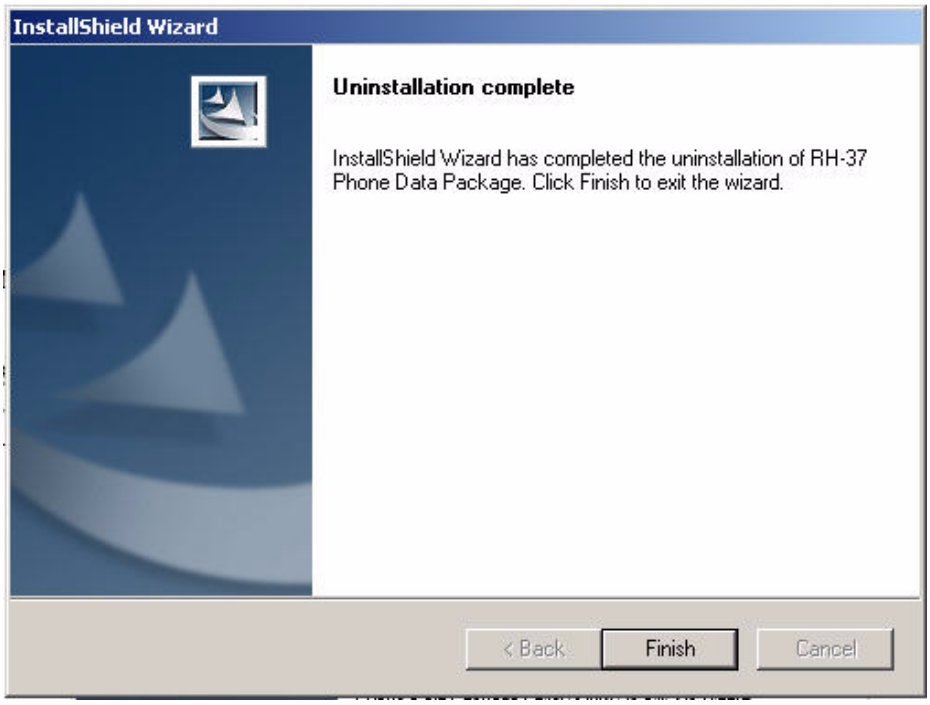
Once the previously installed data package is uninstalled, choose "Finish".


InstallShield Wizard
Uninstallation complete
InstallShield Wizard has completed the uninstallation of RH-37 Phone Data Package. Click Finish to exit the wizard.
< Back
Finish
Cancel

Run the *RH-37_dp_v_0.00_mcuA0.00.0.exe* again in case you want to continue installation from the beginning.

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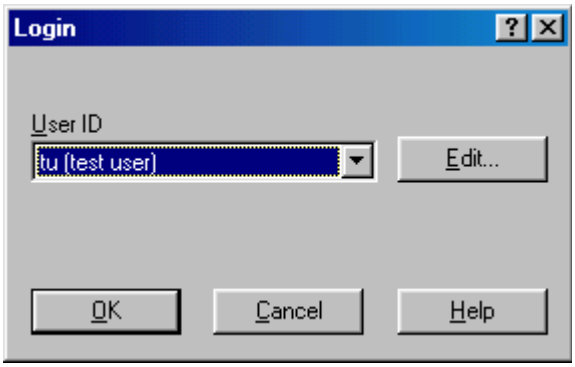
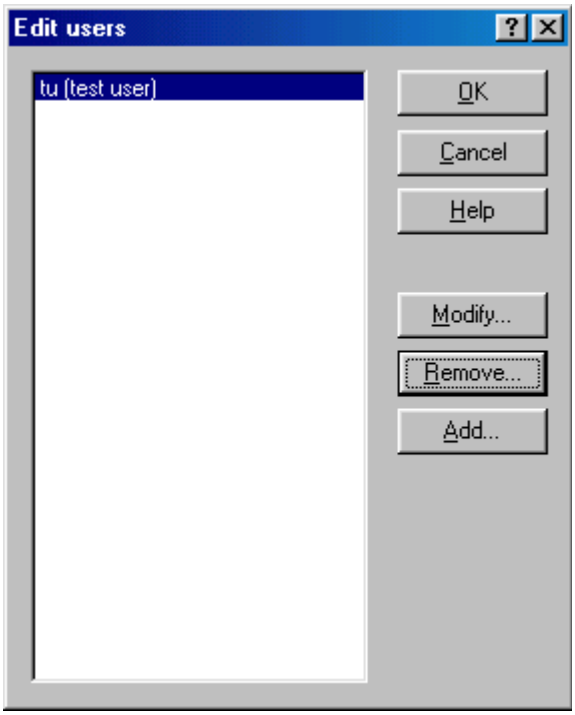
Configuring Users

Start Phoenix Service SW and Login. To add new user, choose "Edit". If user ID is already configured, choose your own user ID from the list and choose "OK".



To continue, choose "Add".



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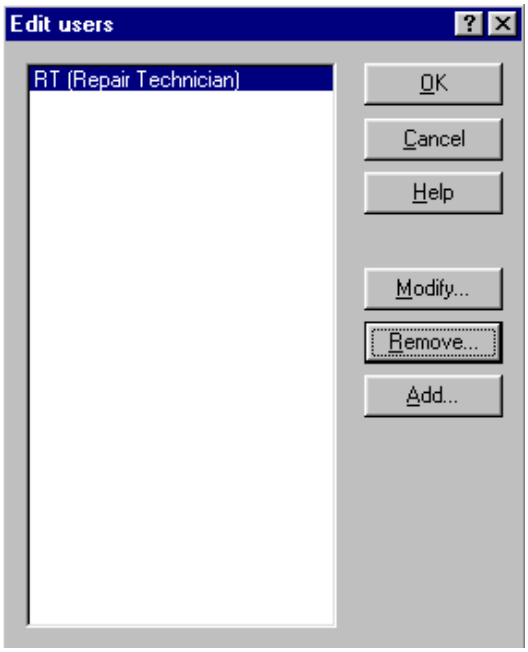
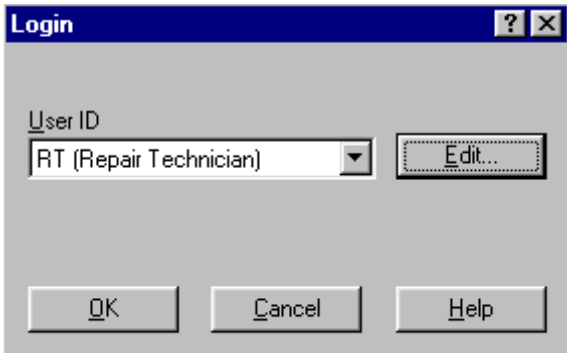
Type in your name and initials in the fields and choose "OK".

User has now been created, choose "OK".



You are now able to login with this username, choose "OK".



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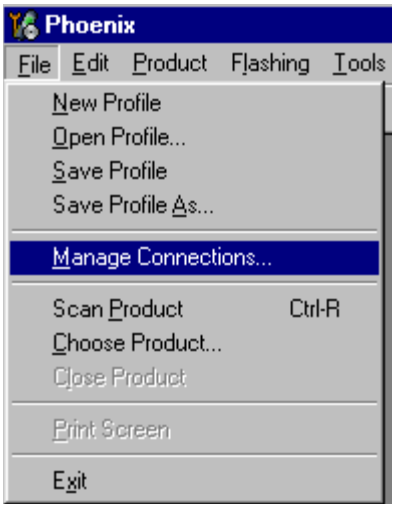
Managing Connections

Start Phoenix service SW and login.

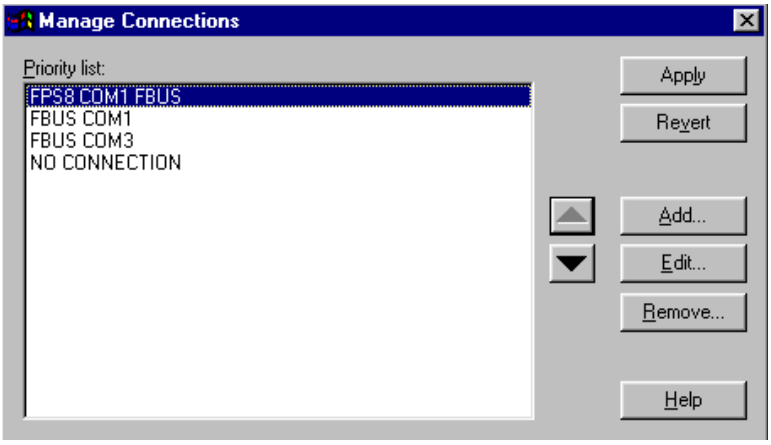
Choose "Manage Connections" from the "File" menu.



In this dialog, you can select, edit, delete existing connections and create new ones.

You can create a connection either manually or by using a Connection Wizard.

To add new connection, choose "Add" and select if you want to create it manually or by using the Wizard.



To continue, choose "Next".

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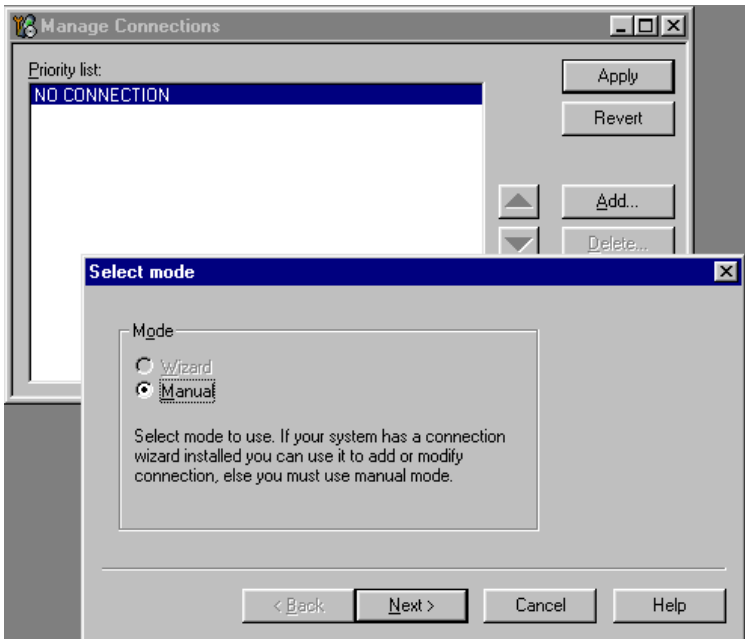
In the next dialogs, you are asked to select some settings for the connection.



Manual settings

A) For **FLS-4S POS Flash Device** choose following connection settings

- **Media:** FBUS
- **COM Port:** Virtual COM Port used by FLS-4. **Please check this always!**

(To check please go to Windows / Control Panel / FLS Virtual Port / Configuration)

B) For **FPS-8 Flash Prommer** choose following connection settings:

- **Media:** FPS-8
- **Port Num:** COM Port where FPS-8 is connected
- **COMBOX_DEF_MEDIA:** FBUS

Choose "Finish" to complete.

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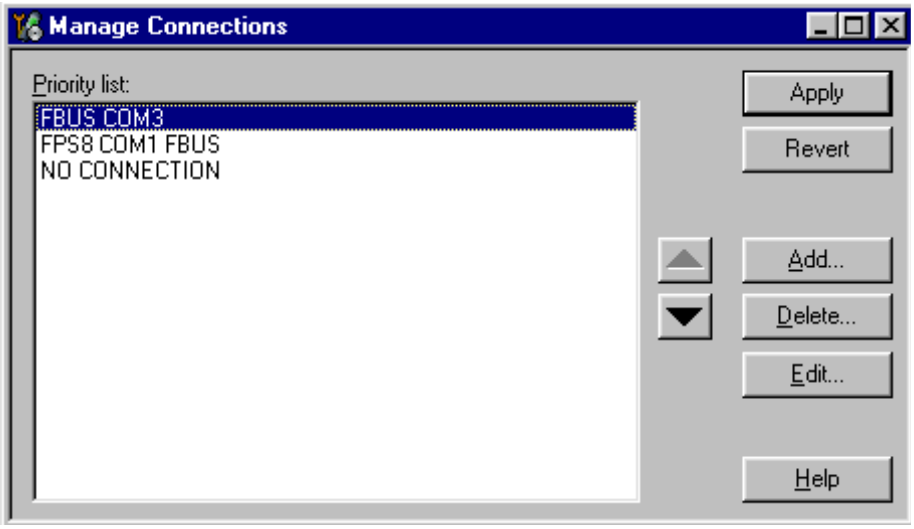
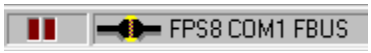
If you use the Wizard, connect the tools and a phone to your PC and the wizard will automatically try to configure the correct connection.

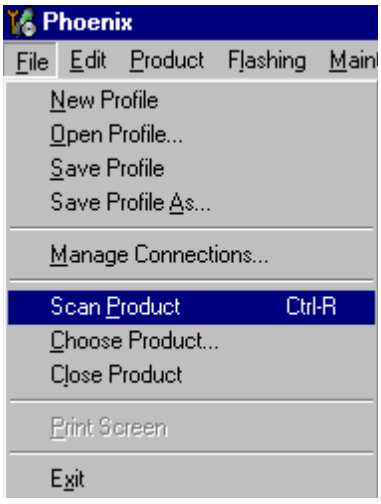
Activate the connection you want to use by clicking it. Use up/down arrows to move it on top of the list. Choose "Apply". The connection is now selected and can be used after closing the "Manage Connections" window.



The selected connection is shown at the right-hand bottom corner of the screen.



To use the selected connection, connect the phone to Phoenix with correct service tools, make sure that it is switched on and select "Scan Product".



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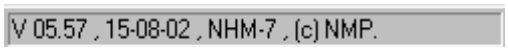
When a product is found, Phoenix loads product support and when everything is ready, name of the loaded product support module and its version are shown at the bottom of the screen.



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Updating Flash Support Files for FPS-8* and FLS-4*

Before installation

- Install Phoenix Service SW.
- Install phone model Specific Data package for Phoenix.

The flash support files are delivered in the same installation package with Phoenix data packages or newer Phoenix packages beginning from September 2003.

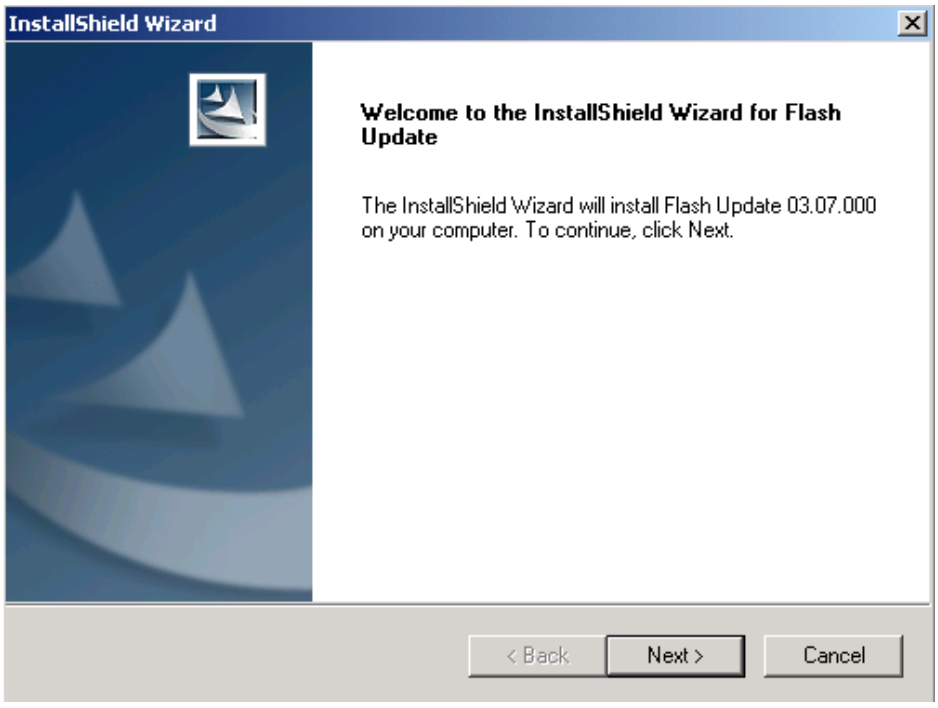
Normally it is enough to install the Phoenix and phone data package only because the Phoenix installation always includes the latest flash update package files for FLS-4S / FPS-8*.

Separate installation package for flash support files is available, and the files can be updated according to this instruction if updates appear between Phoenix / data package releases.

Installing the flash support files (only separate installation package)

If you are not using a separate installation package, you can skip this section.

Start by double clicking *flash_update_03_07_000.exe*. The installation begins.


InstallShield Wizard
Welcome to the InstallShield Wizard for Flash Update
The InstallShield Wizard will install Flash Update 03.07.000 on your computer. To continue, click Next.
< Back
Next >
Cancel

If the same version of the flash update package already exists, and you want to reinstall

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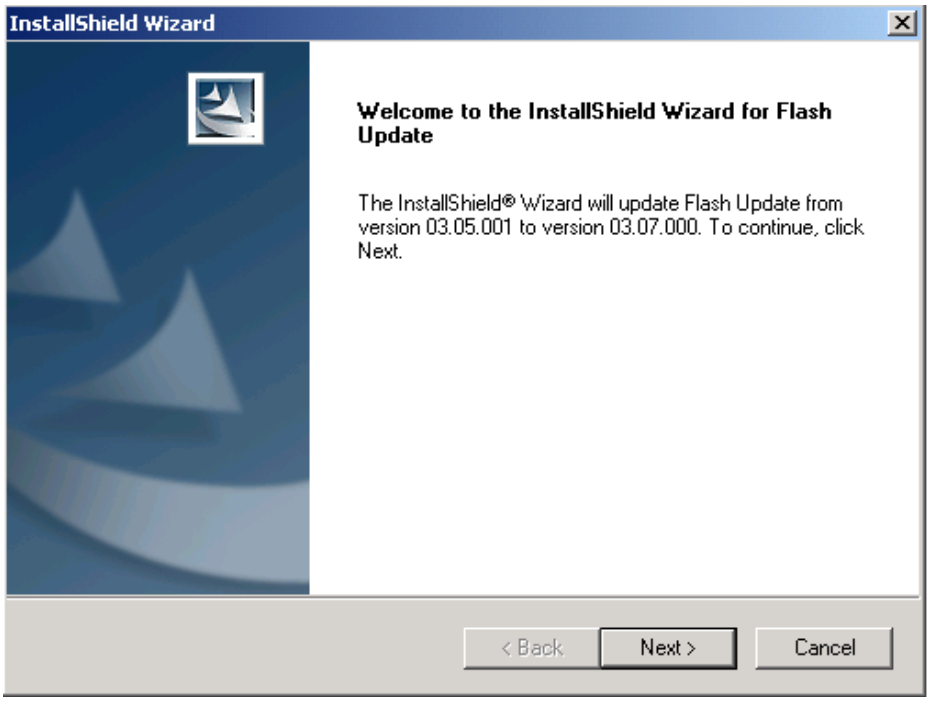
it, the previous package is first uninstalled. Restart installation after that.

Uninstall Flash Update
Do you want to completely remove the Flash Update 03.07.000 application and all of its components?
OK
Cancel

If you try to downgrade the existing version, the setup will be aborted. However, if you want to downgrade, uninstall newer files manually from the Control Panel and then rerun the installation again.

You have newer version of the application.
If you want to install older version you need to uninstall the current version before.
Setup will exit.
OK

If an older version exists on your PC and it needs to be updated, choose "Next" to continue installation.


InstallShield Wizard
Welcome to the InstallShield Wizard for Flash Update
The InstallShield® Wizard will update Flash Update from version 03.05.001 to version 03.07.000. To continue, click Next.
< Back
Next >
Cancel

It is **highly** recommended to install the files to the default destination folder *C:\Program Files\Nokia\Phoenix*.

To continue, choose "Next" .

Note! When installing the flash update files for the first time you may choose another location by selecting "Browse" (not recommended).

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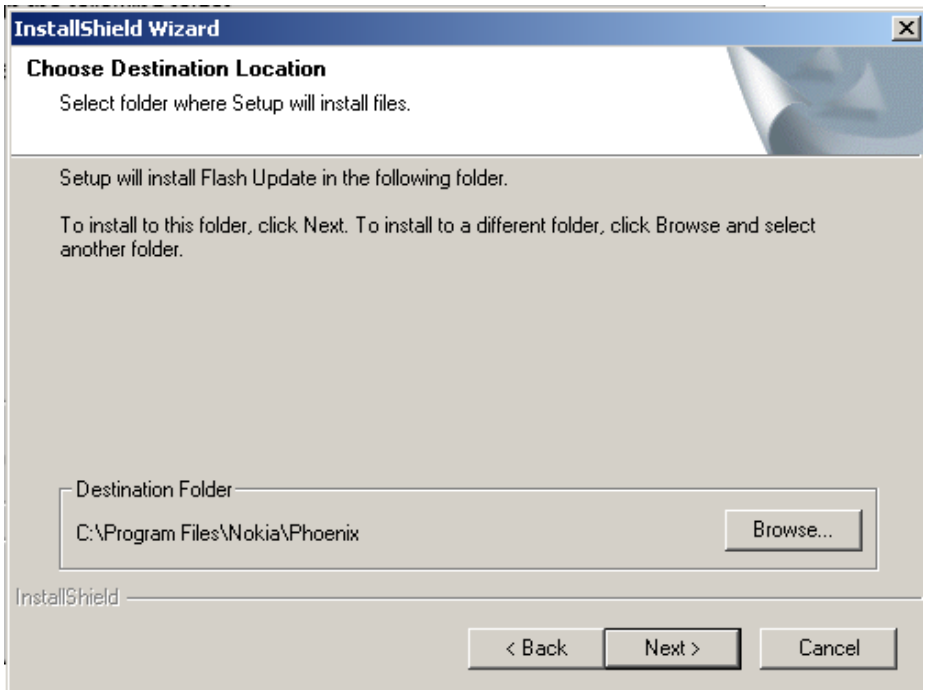
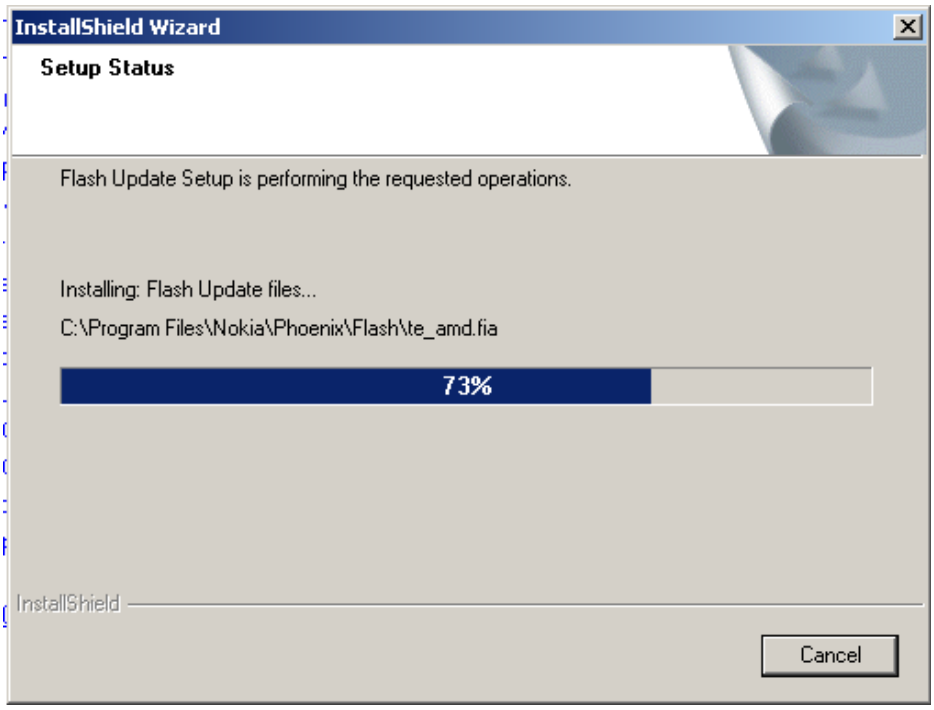

InstallShield Wizard
Choose Destination Location
Select folder where Setup will install files.
Setup will install Flash Update in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Program Files\Nokia\Phoenix
Browse...
InstallShield
< Back
Next >
Cancel

The installation continues.



To complete the procedure, choose "Finish".

FLS-4 can be used right after the flash update package is installed.

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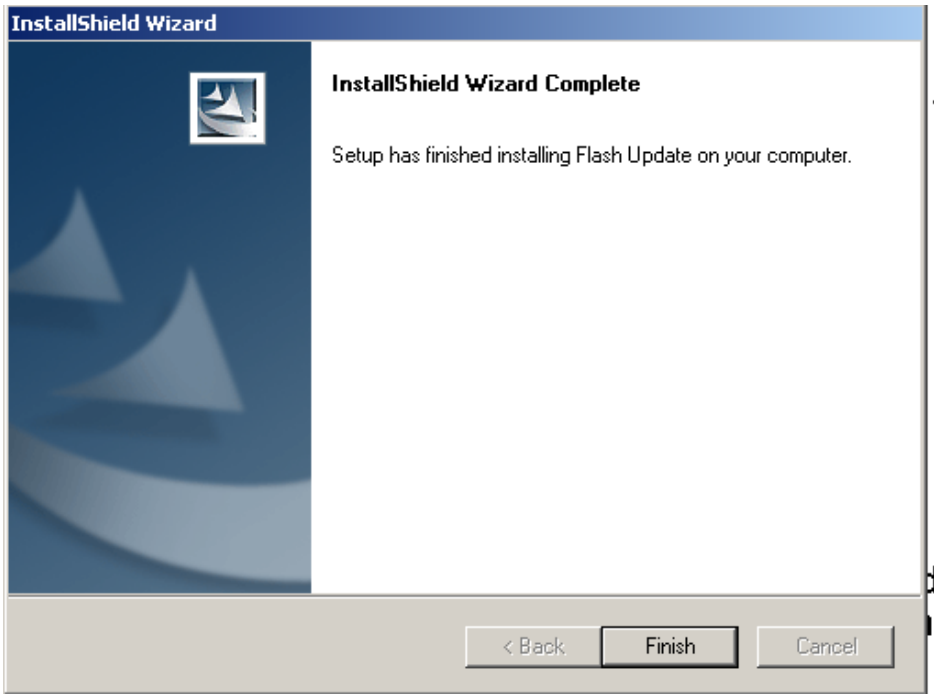
FPS-8* flash prommer must be updated by using Phoenix!

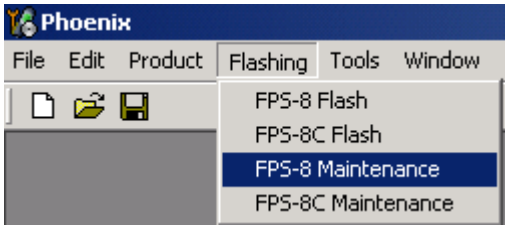


Updating FPS-8* flash prommer SW

Start Phoenix service software and login.

Manage connection correctly for the FPS-8* flash prommer.

Select "FPS-8 maintenance" from the "Flashing" menu.



When a new FPS-8 flash update package is installed to your computer, you are asked to update the files to your FPS-8 Prommer.

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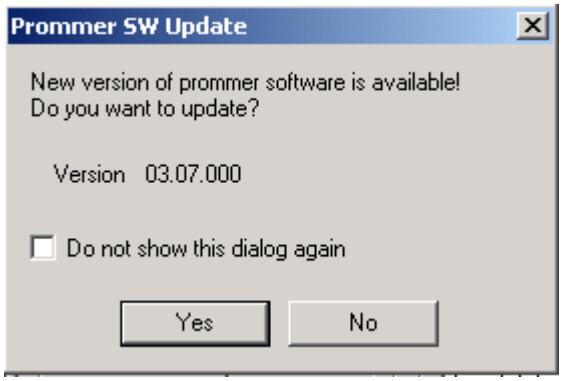
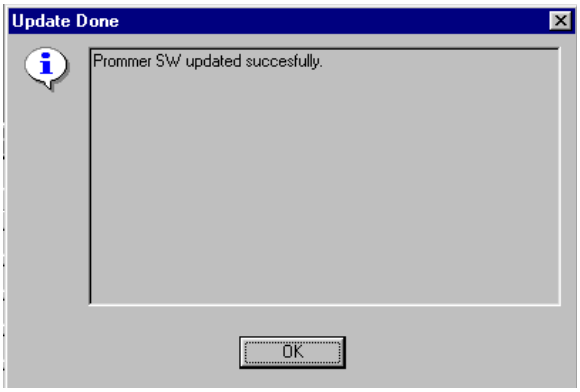
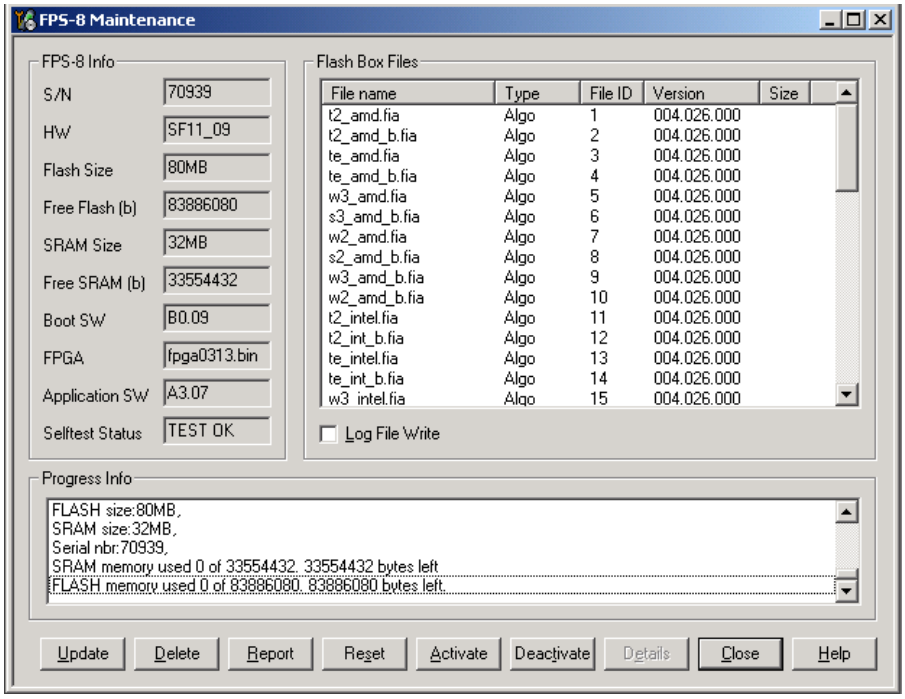
Select "Yes" to update files.



The update procedure takes a couple of minutes, please wait until you are notified that the update has been successful. Choose "OK" and close "FPS8 Maintenance" UI.



View after a successful prommer software update.



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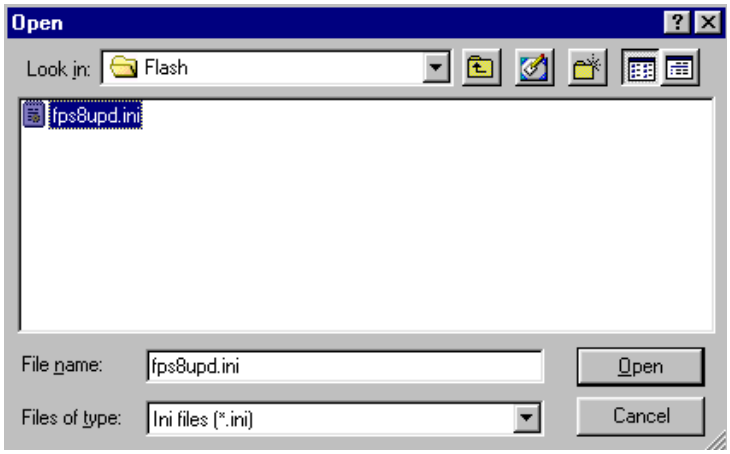
FPS-8 sw can also be updated by pressing the "Update" button and selecting the appropriate **fps8upd.ini** file under *C:\Program Files\Nokia\Phoenix***Flash**.



All files can be loaded separately to FPS-8. To do this, just press the right mouse button in the "Flash box files" window and select the desired file type. More information and help can be found from the "Help" dialog.

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Activating and Deactivating FPS-8

Before the FPS-8 can be successfully used for phone programming, it must be first activated.

If there is a need to send the FPS-8 box to somewhere, e.g. for repair, the box must first be deactivated.

Activating FPS-8

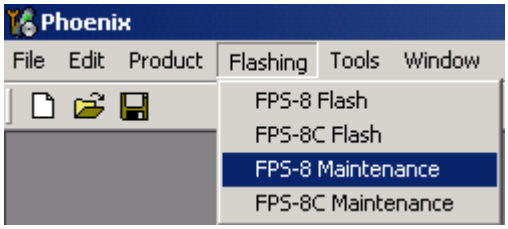
Before FPS-8 can be successfully used for phone programming, it must be activated.

First, fill in the "FPS-8 activation request" sheet in the FPS-8 sales package and follow the instructions in the sheet.

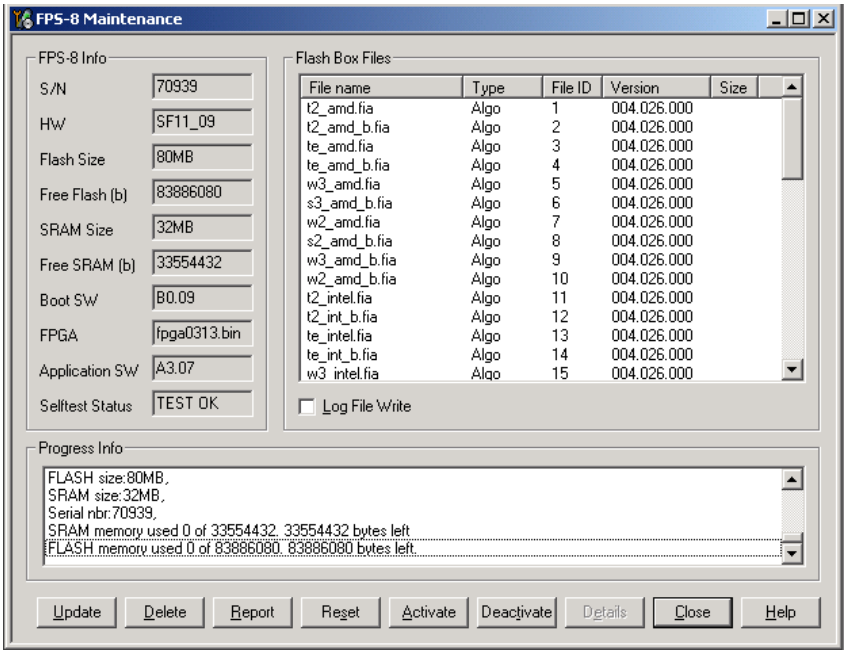
When the activation file is received (e.g. 00000.in), copy it to *C:\Program-Files\Nokia\Phoenix\BoxActivation* directory on your computer. (This directory is created when Phoenix is installed.)

Start Phoenix Service Software.

Select "FPS-8 maintenance" from "Flashing" menu.



Select "Activate" from the "FPS8 Maintenance" UI. The box will be activated when you choose "**Activate**".



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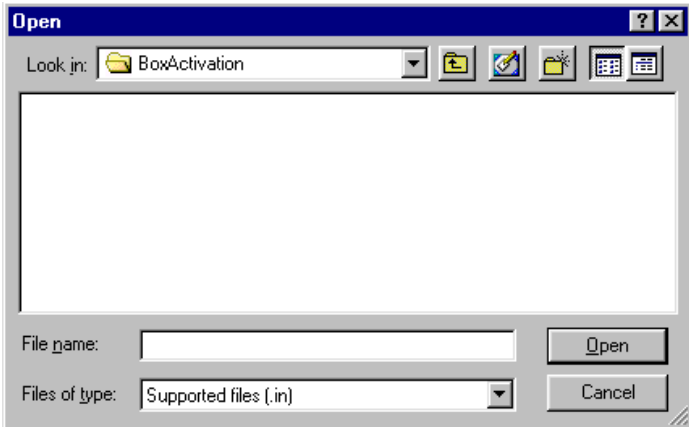
If you save the activation file you to some other directory on your PC, please browse to find it. The box will be activated when you choose "**Open**".



To complete the activation, turn FPS-8 power off and on.

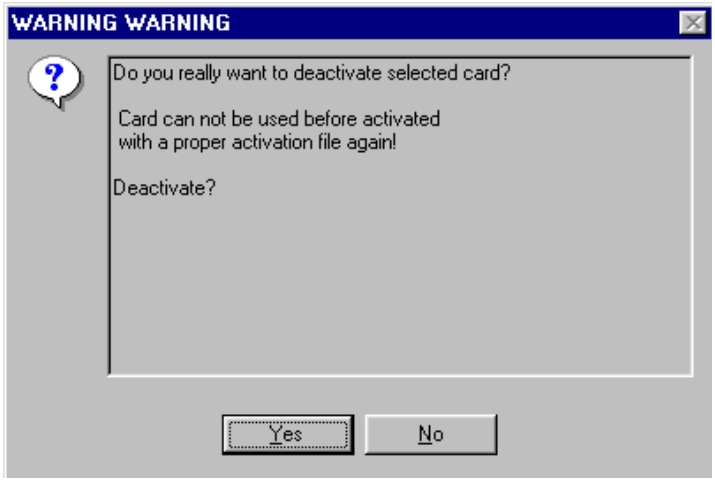
Deactivating FPS-8

Start Phoenix Service Software.

Select "FPS-8 maintenance" from "Flashing" menu as when activating prommer or updating sw.

Select "**Deactivate**" from the "FPS8 Maintenance" UI.

Confirm Deactivation by choosing "Yes", Box will be deactivated.



To complete deactivation, turn FPS-8 power off and on.

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JBV-1 Docking Station SW

The JBV-1 Docking Station is a common tool for all DCT-4 generation products.

In order to make the JBV-1 usable with different phone models, a phone specific Docking Station Adapter is used for different service functions.

The JBV-1 Docking Station contains Software (Firmware) which can be updated.

You need the following equipment to be able to update JBV-1 software:

- PC with USB connection
- Operating System supporting USB (Not Win 95 or NT)
- USB Cable (can be purchased from shops or suppliers providing PC hardware and accessories)
- JBV-1 Docking Station
- External Power Supply 11-16V

Before installation

Download the *Jbv1_18_update.zip* file to your computer (e.g. C:\TEMP) from your download web site.

Close all other programs.

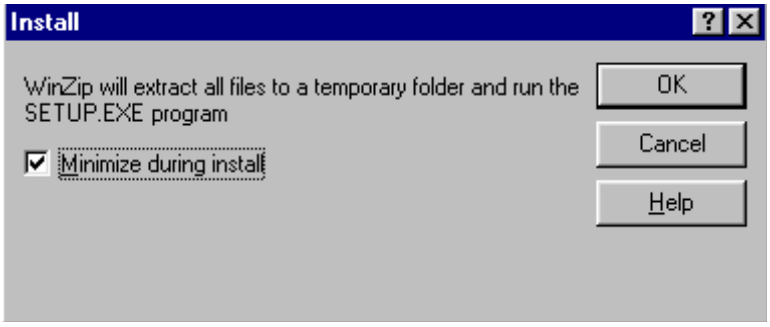
Follow instructions on the screen.

Installing SW needed for the JBV-1 SW update

Note: DO NOT CONNECT THE USB CABLE / JBV-1 TO YOUR COMPUTER YET!

Run Jbv1_18_update.zip file and start SW Installation by double clicking Setup.exe.

Files needed for the JBV-1 Package setup program will be extracted.



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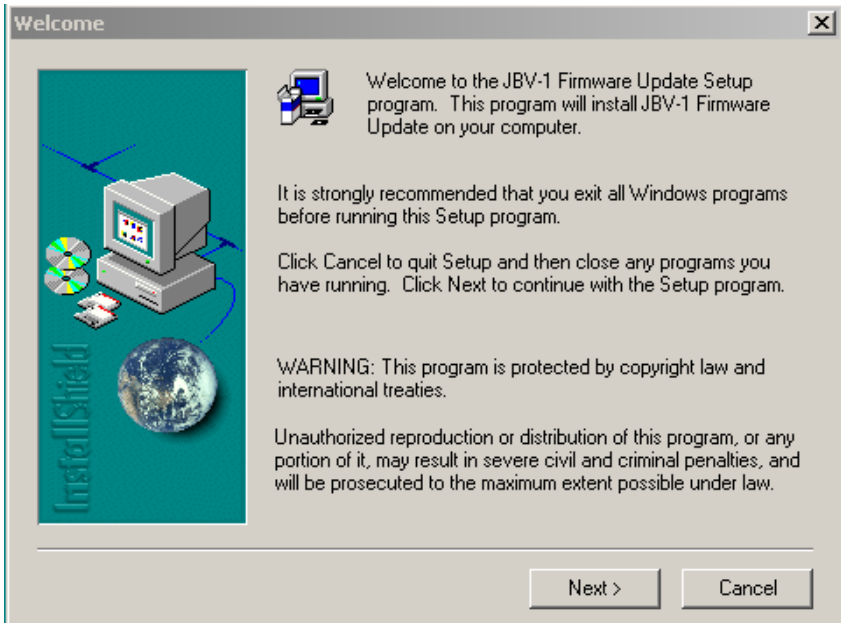
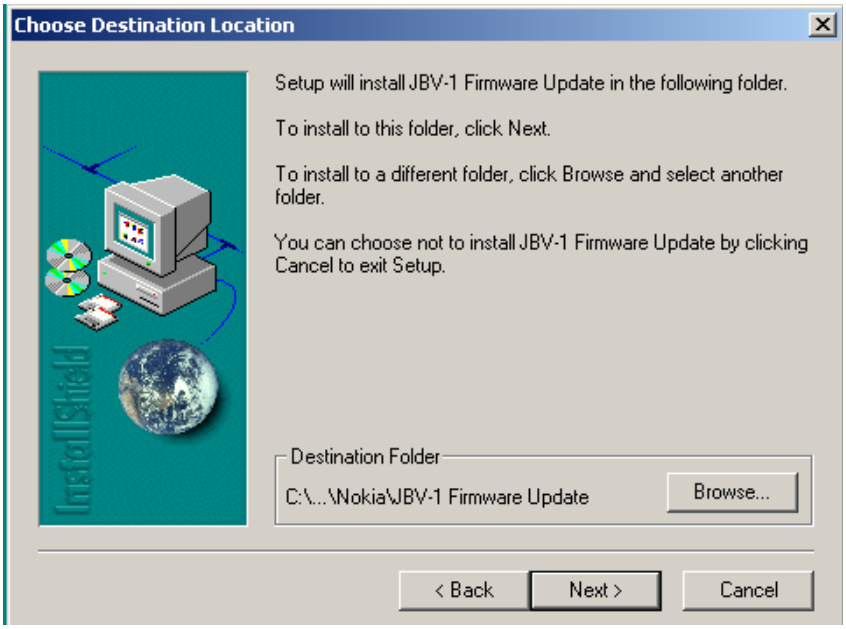
The installation begins, please read the information displayed.

To continue, choose “Next” .


Welcome
Welcome to the JBV-1 Firmware Update Setup program. This program will install JBV-1 Firmware Update on your computer.
It is strongly recommended that you exit all Windows programs before running this Setup program.
Click Cancel to quit Setup and then close any programs you have running. Click Next to continue with the Setup program.
WARNING: This program is protected by copyright law and international treaties.
Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.
InstallShield
Next >
Cancel

Use suggested destination folder where JBV-1 SW package is installed and choose “Next” to continue.


Choose Destination Location
Setup will install JBV-1 Firmware Update in the following folder.
To install to this folder, click Next.
To install to a different folder, click Browse and select another folder.
You can choose not to install JBV-1 Firmware Update by clicking Cancel to exit Setup.
Destination Folder
C:\...\Nokia\JBV-1 Firmware Update
Browse...
InstallShield
< Back
Next >
Cancel

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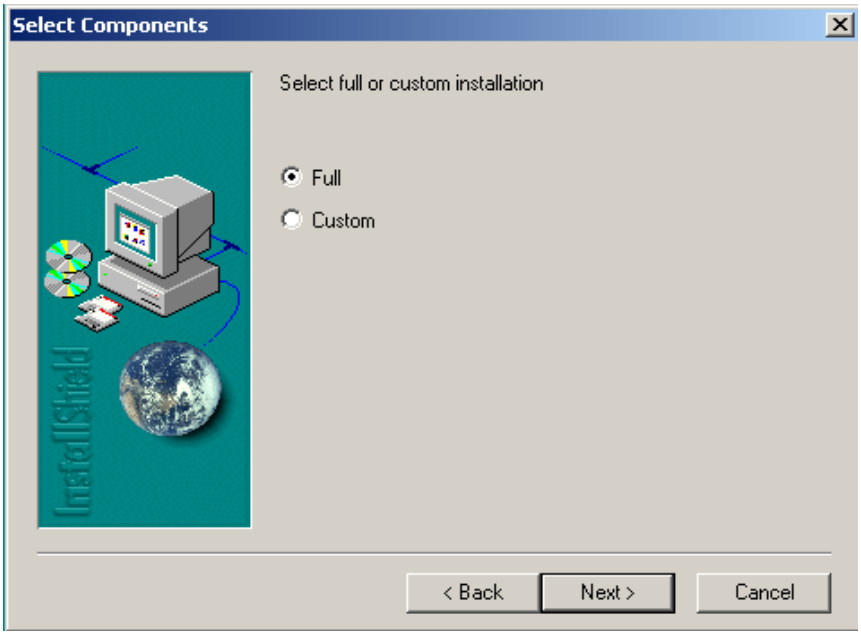
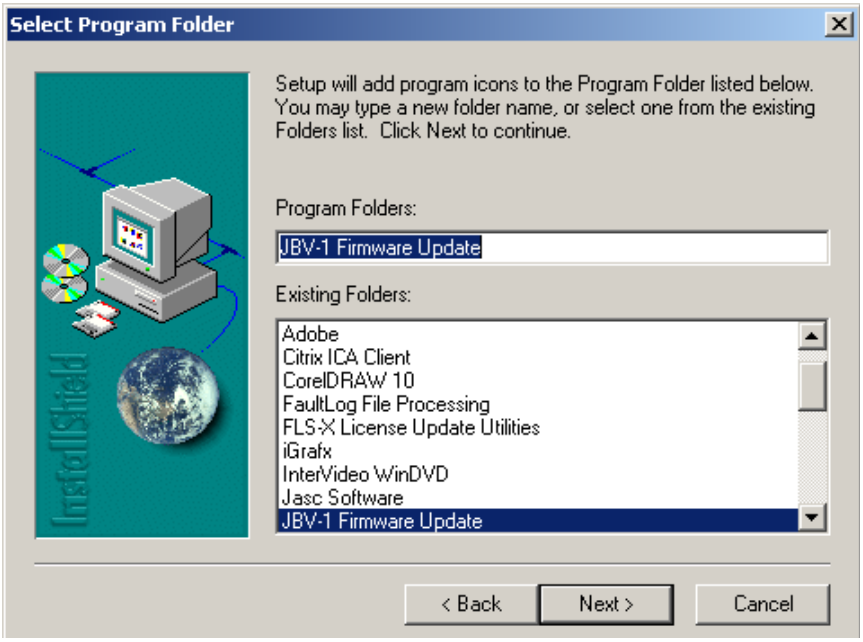
To continue, select “Full” Installation and choose “Next” .



The program folder is created. To continue, choose “Next”.

Software files are installed.



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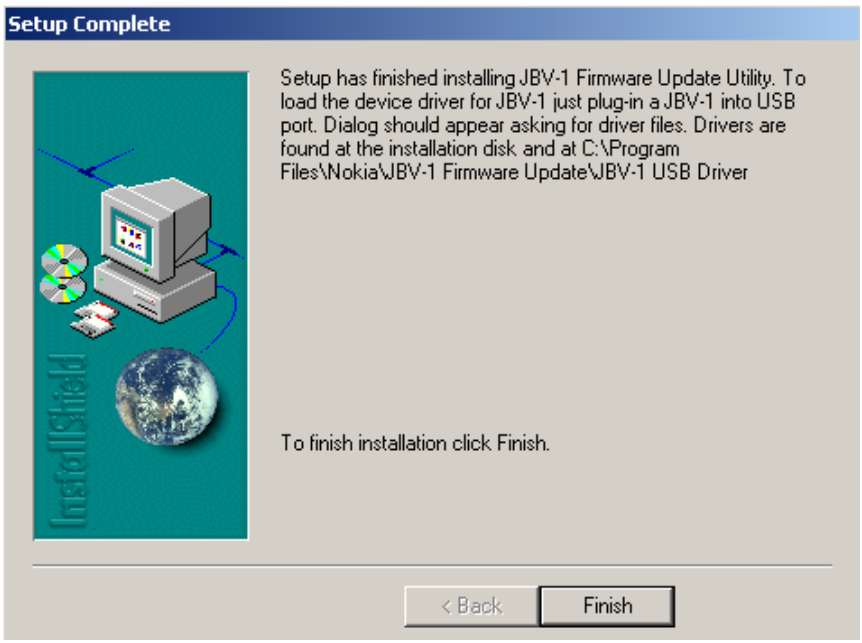
After a successful installation, choose "Finish" to complete.


Setup Complete
Setup has finished installing JBV-1 Firmware Update Utility. To load the device driver for JBV-1 just plug-in a JBV-1 into USB port. Dialog should appear asking for driver files. Drivers are found at the installation disk and at C:\Program Files\Nokia\JBV-1 Firmware Update\JBV-1 USB Driver
To finish installation click Finish.
InstallShield
< Back
Finish

YOU CAN NOW CONNECT THE USB CABLE / JBV-1 TO YOUR COMPUTER.

Connect power to JBV-1 (11-16V DC) from an external power supply, then connect the USB cable between JBV-1 USB connector and PC.

The next step is to install or update the JBV-1 USB drivers which are delivered with the JBV-1 SW installation package. They can be found in folder:

C:\Program Files\Nokia\ JBV-1 Firmware Update\JBV-1USB driver

If there is no previously installed JBV-1 Firmware update package installed on your computer, Windows will detect the connected USB cable and drivers for new HW. You will be prompted about this, please follow the instructions and allow Windows to search and install the best drivers available.

If there is a previously installed JBV-1 Firmware update package (v 17 or older) on your computer, please update the JBV-1 USB Driver. *Please see the readme.txt* file under

C:\Program Files\Nokia\ JBV-1 Firmware Update\JBV-1USB driver folder for instructions on how to update the JBV-1 USB Driver.

After you have installed or updated the JBV-1 USB driver, the actual JBV-1 SW update can begin.

Go to folder *C:\Program Files\Nokia\JBV-1 Firmware Update\JBV-1 Firmware Update* and start JBV-1 Update SW by double clicking **fwup.exe**.

The JBV-1 Firmware update starts and shows the current status of the JBV-1 connected.

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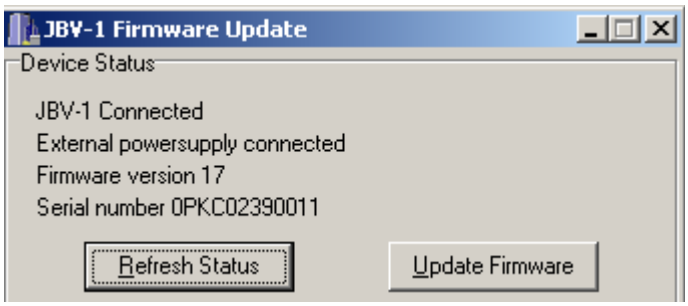
If the firmware version read from your JBV-1 is not the latest one available (v. 17 or older), it needs to be updated to version 18 by choosing "Update Firmware".

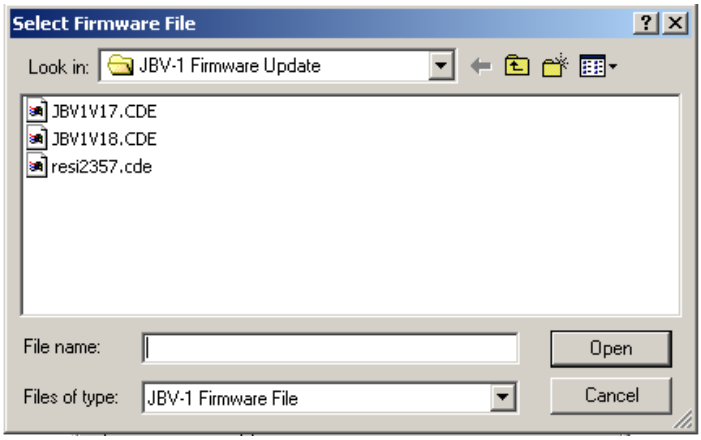
If you simply want to check the SW version, choose "Refresh Status".



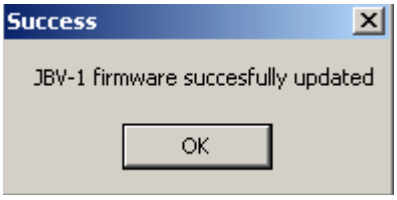
To update your JBV-1 to new version 18, choose file *JBV1v18.CDE* and "Open".

Please wait, it takes a while until you can hear a "**click**" from the JBV-1.

The older sw file JBV1v17.CDE is visible in this view only if the previous JBV-1 SW package has been installed on your computer.



After a successful update and after choosing "OK" the current JBV-1 status is displayed.



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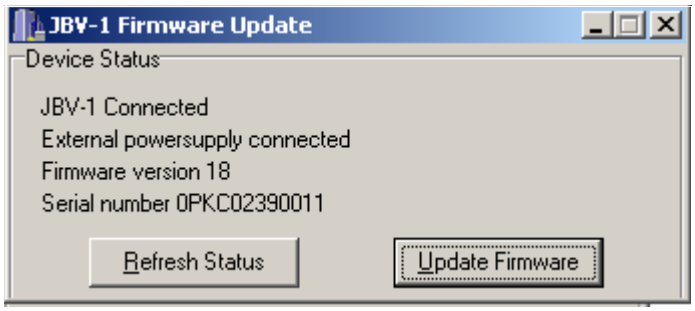

You have now updated the JBV-1 software and it is ready for use.

If you have several docking stations you need to update, disconnect the Power & USB cables from the previous one and connect them to the next docking station.

Choose "Refresh Status" to see the current SW version and then "Update Firmware" to update the SW.

After you have updated all docking stations, close the "JBV-1 Firmware Update" dialog.

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Baseband Calibration

If the UEMEK or the Combo memory has been changed, the baseband has to be calibrated. It is only the UEMEK that has to be calibrated for baseband.

General instructions for tuning

- Connect the phone to a PC, which has Phoenix Service Software and a dongle installed. A JBV-1 box and an FPS-8 flash box are also needed.
    - Connect the JBV-1 to a external power supply and adjust the voltage to 12-15 V and limit the current to 0.5 - 3 A.
    - Connect the JBV-1 with the XCS-4 cable to the FPS-8-box and take care that the JBV-1 box is properly connected to the PC by the serial cable.
    - Attach the phone to the JBV-1 properly.
    - Connect the phone and the JBV-1 box via the SCB-3 cable.
- Start Phoenix Service Software and open FBUS connection.
- Select <Scan Product> (Ctrl-R or in menu file < Scan Product>).
- Wait until the phone information is shown in the lower right corner of the screen.
- Set the operating mode to <Local>.

UEMEK calibration

Select “Tuning” and “Energy Management Calibration” in Phoenix menu.

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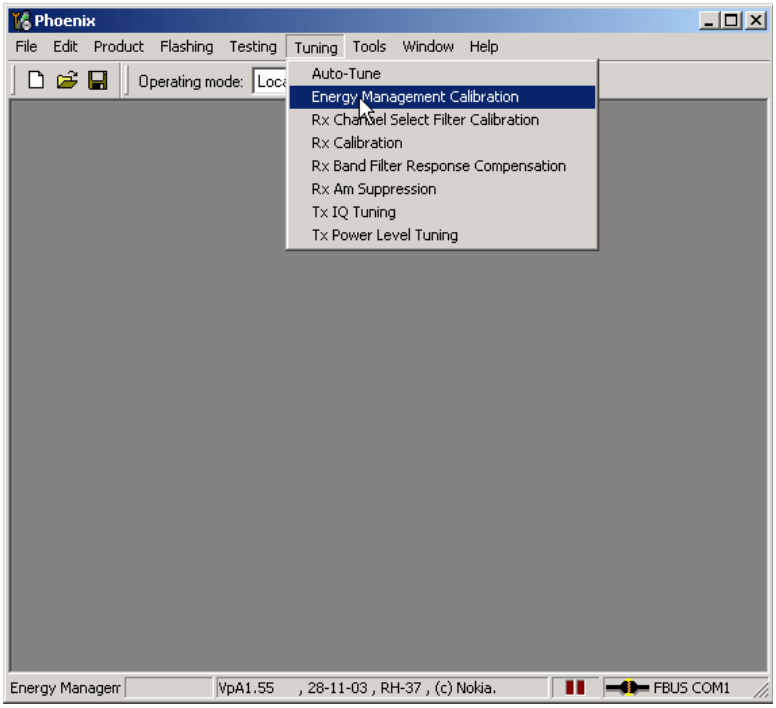
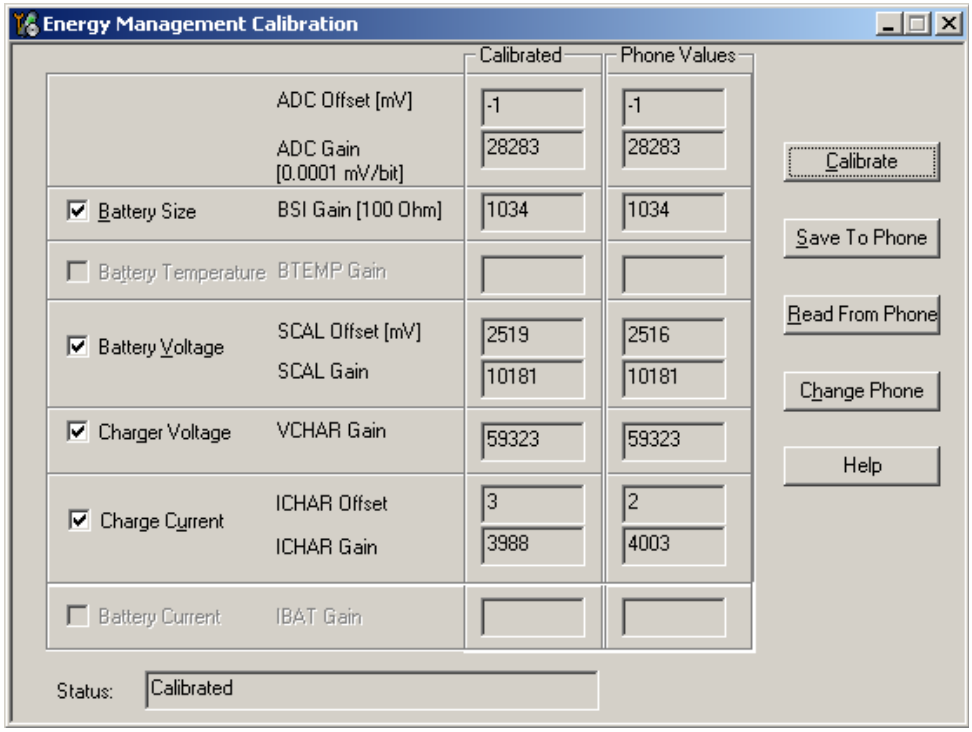
Figure 1: Selecting energy management calibration with Phoenix.



Select "Calibrate" and save the results by pressing "Save To Phone" when the calibration is finished.

Figure 2: Starting calibration using Phoenix



Check that the values are within the limits given in table below.

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Calibration limits

Table 1: BB calibration limits

Parameter	Min	Max
ADC Offset	-50	+50
ADC Gain	26500	28500
BSI Gain	950	1100
Battery Voltage Offset	2300	2900
Battery Voltage Gain	10000	11000
Charger Voltage	55800	64000
Charger Current Offset	-150	+150
Charger Current Gain	3750	4650

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Phoenix Tuning

General instructions for tuning

Connect the phone to a PC, which has Phoenix Service Software and a dongle installed, using either

- repair jig and DAU-9S (RS232) cable or
- repair jig and XCS-4 cable via FPS-8 flash box or
- DAU-9T cable (RS232).

Connect the phone to a power supply (DC voltage of 3.6V, min. current of 3A) and switch the phone on.

Start Phoenix Service Software and open FBUS connection.

Select <Scan Product> (Ctrl-R or in menu file < Scan Product>).

Wait until the phone information is shown in the lower right corner of the screen.

Set operating mode to <Local>.

NOTE: PHOENIX automatically selects the product (phone) by scanning when using the CCS-dongles, e.g. PKD-1CS or PKD-1. This means all commands

Select Scan Product Ctrl-R

as mentioned in this document are irrelevant !

RF tuning after repairs

Following tunings have to be performed after repairs:

- Repairs in the TX part will require "TX Power Level Tuning".
- When component replacements around the modulator area (RF path from UEM via RF ASIC to RF PA) have been done, "TX IQ Tuning" is additionally required.
- In general, repairs in the RX front-end always require "RX Calibration" and "Rx Band Filter Calibration" for **all three bands**.
- Repairs in the PLL circuit always require "RX Calibration" of the low band (GSM900).
- If the RF ASIC was replaced all calibrations mentioned above have to be carried out.

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Table 2: List of necessary tunings after replacement of RF key components and surrounding R/C/Ls

		Tunings/ Calibrations				
Key Component Reference No.	Component Designation	Tx Power Level Tuning	Tx IQ Tuning	Rx Calibration	Rx Band Filter Resp. Calib.	Rx Channel Select Filter Calib.
Z7800	Antenna Switch Module	x		x	x	
Z7802	SAW 1800 Rx			x	x	
Z7801	SAW 1900 Rx			x	x	
N7500	RF ASIC (Helgo 8.5)	x	x	x	x	x
G7501	VCTCXO			x		
G7500	VCO		x			
N7700	TX-PA	x	x			
Z7803	SAW900 Rx			x	x	
Z7700	SAW900 Tx	x				

Semi-automatic calibrations and measurements - step by step: RX/TX and GSM bands

RX tunings

The **RX calibration** has to be performed to determine gains at different gain settings in the RF ASIC. The calibration must be done in **all three bands:**

RX calibration requires an external RF signal generator. Most of the radio communication testers like CMD 55 or CMU 200 can be used also as RF signal generators, generating continuous RF signals (CW signal) with defined levels and frequencies.

Note: Depending on Firmware version, the CMU 200 can have problems generating a non-pulsed, non-modulated CW signal.

RX calibration in the GSM900 band combines two alignments: AFC and AGC calibrations. The calibration of GSM 1800 and GSM 1900 bands only determines the AGC values.

The **AFC calibration** detects an initial AFC value and an AFC slope coefficient. The AFC calibration ensures the proper function of the initial synchronization (base station search, before location update is done) when the phone has been set to Normal Mode.

For an error free initial synchronization, the 26 MHz frequency of the reference oscillator must be accurate enough. Therefore, the previously calibrated AFC value is written to the DA converter and the corresponding AFC voltage tunes the VCTCXO to the correct frequency.

The **AGC calibration** detects the gain values of the RX chain. The RF LNA can be switched either on or off. The gain difference between on and off state is nominally 30dB and the baseband gain which is controlled by 15 gain steps called in PHOENIX RSSI 0 to RSSI 14 each having a graduation of 6 dB. The LNA is switched off at the steps RSSI 0 to RSSI 4.

AGC calibration detects the gain at the 3 gain steps RSSI 4, RSSI 5, and RSSI 7. All other steps are calculated.

A value, **RF_TEMP**, which represents the RF hardware temperature, is determined during the RX calibration. This temperature value is used by the DSP for RSSI reporting correction and Tx temperature compensation in the Normal Mode of the phone. Dependent on the Phoenix version it might be not displayed while calibrating.

The Rx calibration has to be done in a temperature of 25°C due to the detection and saving of the RF_TEMP value.

The RX calibration is only valid if the results are within defined limits. For the latest specified limits, please refer to the production limits of the FLALI and FINUI testers' documents.

If the results are not within these limit ranges, the receiver is faulty.

Rx calibration GSM900, GSM1800 and GSM1900

Open the window <Rx Calibration> in Phoenix Service Software as follows:

Select	Tuning		Alt-U
		Rx calibration	Alt-C

Phoenix automatically selects the low band.

Press <Start>

The window <Tuning step 1 of 3 – Rx Calibration with band ...> pops up informing on power level of the signal generator and frequency to be set. Do accordingly, after connecting the signal generator to the antenna port of the test jig respectively to the phone. Compensate for external RF cable and test jig losses.

If a radio communication tester (CMD 55, CMU 200, HP 8960, MT 8801) is used, assure that <continuous mode> is switched on and <modulation> switched off.

Press <ok> and the window will close.

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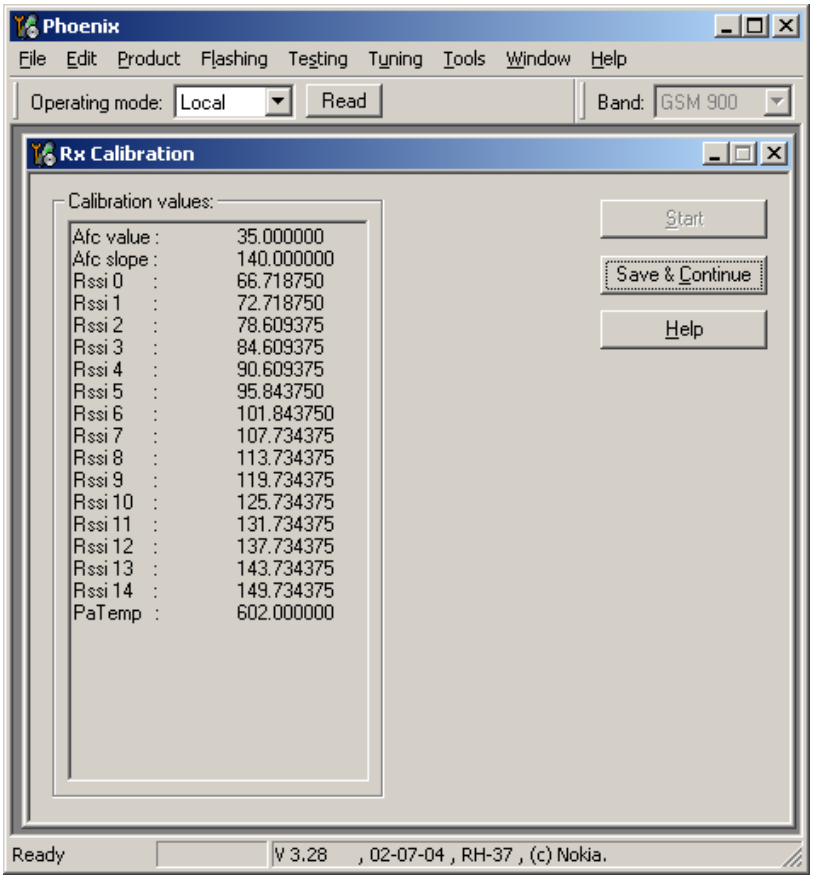
The setup should now look like this:



The results must fulfill the following limits:

Calibration value / Test case	Typical	Low limit	High limit
AFC value / check AFC_VALUE [DAC]	53	-350	+350
AFC Slope / check AFC_SLOPE [DAC]	128	90	165
Rssi 4 / Check RX GSM xxx Gain A 5 [dB]	89 (92)	83 (86)	95 (98)
Rssi 5 / Check RX GSM xxx Gain A 6 [dB]	94 (99)	88 (93)	100 (105)
Rssi 6 / Check RX GSM xxx Gain A 7 [dB]	100 (105)	94 (99)	106 (111)
Rssi 7 / Check RX GSM xxx Gain A 8 [dB]	106 (111)	100 (105)	112 (117)

GSM xxx means the selected band: GSM900/GSM1800 or GSM1900 (values in brackets).

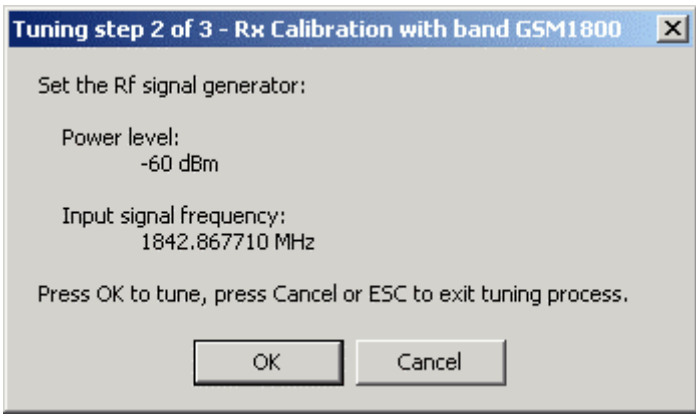
If **all** values are within the low and high limits ranges

Press <Save and Continue>

If one or more of the values are out of the above specified limit ranges, do not save them to the phone memory. Stop the Rx calibration and repeat troubleshooting.

Otherwise continue Rx calibration according to the tuning steps 2 and 3 for GSM1800 respectively GSM1900 bands. Note the limits of the calibration mentioned in the list above.

Pop up window for Rx calibration of GSM1800 band


Tuning step 2 of 3 - Rx Calibration with band GSM1800
Set the Rf signal generator:
Power level:
-60 dBm
Input signal frequency:
1842.867710 MHz
Press OK to tune, press Cancel or ESC to exit tuning process.
OK
Cancel

Calibration fails and possible reasons:

- If the whole calibration fails, the low band receiver chain (GSM850 or GSM900) or the synthesizer part (including reference oscillator) might be defective.
- If Rssi3 and Rssi6 are within the limits, all other Rssi values are valid, too. If one of them or both are out of limits, the low band receiver part has to be checked.
- If AFC value or AFC slope fails, but the Rssi values are within the limits, the VCTCXO G7501 or UEM D200 might be defective.

RX band filter response compensation

This alignment is necessary to compensate the frequency response of the RX band filters (SAW filters).

Rx band filter response compensation GSM900, GSM1800 and GSM1900

Manual tuning

Open the window <Rx Band Filter Response Compensation> in Phoenix Service Software as follows:

Select	Tuning		Alt-U
		Rx Band Filter Response Compensation	Alt-C

Phoenix automatically selects the low band.

Select	Tuning mode	Manual (Radio Button)

Connect an RF signal generator to the antenna port of the test jig respectively the phone.

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If a radio communication tester (CMD 55, CMU 200, HP 8960, MT 8801) is used, assure that <continuous mode> is switched on and <modulation> switched off.

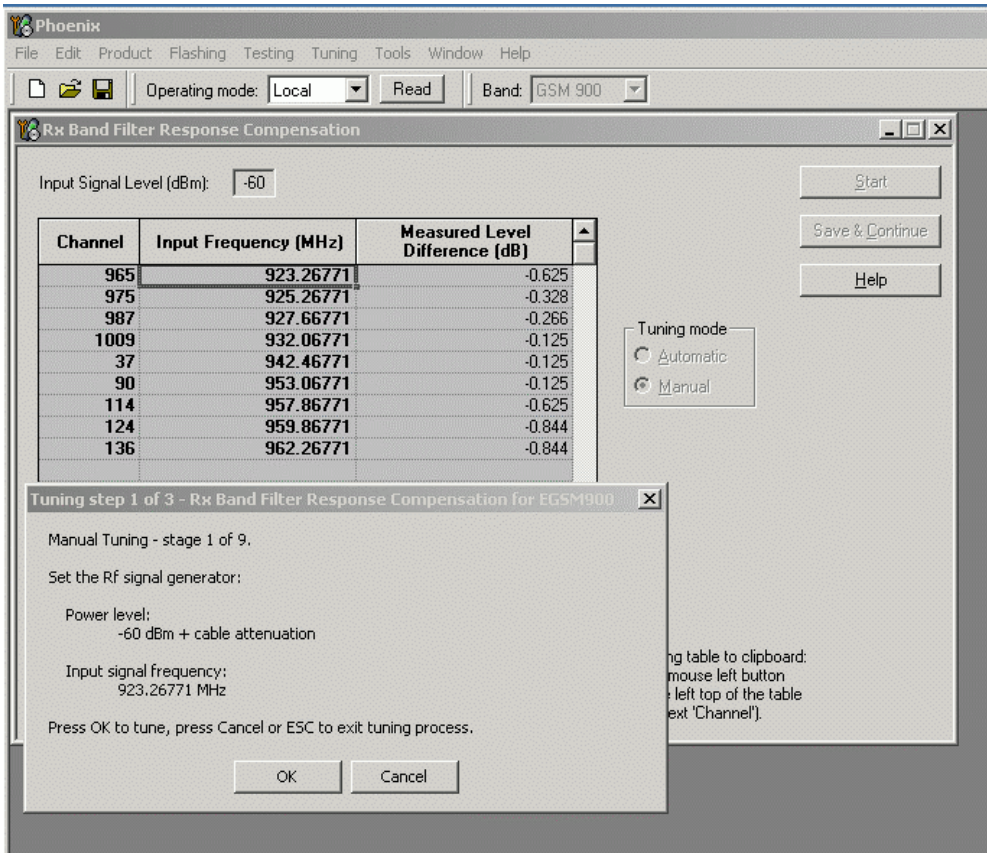
Compensate for external RF cable and test jig losses.

Make sure that the <Input Signal Level (dBm)> field is set to -60 [dBm].

Press the <Start> button in the <Rx Band Filter Compensation> window.

The setup should now look like this:

(The example below shows a screen shot in GSM900!)



Set the RF signal generator as indicated in the pop-up window on the screen.

Press **OK**.

Continue tuning steps 2 to 9 following the instructions for power level and signal frequency input.

Press **OK** after each step.

Note the limits as specified in the table below.

Press **Save & Continue**

Tune the band filters and save its compensation values to the phone memory for each GSM band as described above.

Automatic tuning

A faster and more comfortable method for Band Filter Calibration (BFC) can be performed by the automatic tuning mode. This requires an RF signal generator that can be internally programmed for sweeping, e.g. Agilent E4421B.

Open the window <Rx Band Filter Response Compensation> in Phoenix Service Software as follows:

Select	Tuning		Alt-U
		Rx Band Filter Response Compensation	Alt-C

Phoenix selects automatically the low band.

Select **automatic** in the <Tuning mode> in the <Rx Band Filter Response Compensation> window.

Connect the RF signal generator to the antenna port of the test jig respectively the phone.

Assure that modulation is switched OFF and RF power continuously ON.

Compensate for external RF cable and test jig losses.

Make sure that the <Input Signal Level (dBm)> field in the Rx Band Filter Response Compensation window is set to -60 [dBm].

Press **Start** → the current calibration values from the phone memory are displayed in the column <Measured Level Difference (dB)>.

The window <Tuning step 1 of 3 ...> pops up. Set the RF signal generator according the instructions.

The setup should now look like this:

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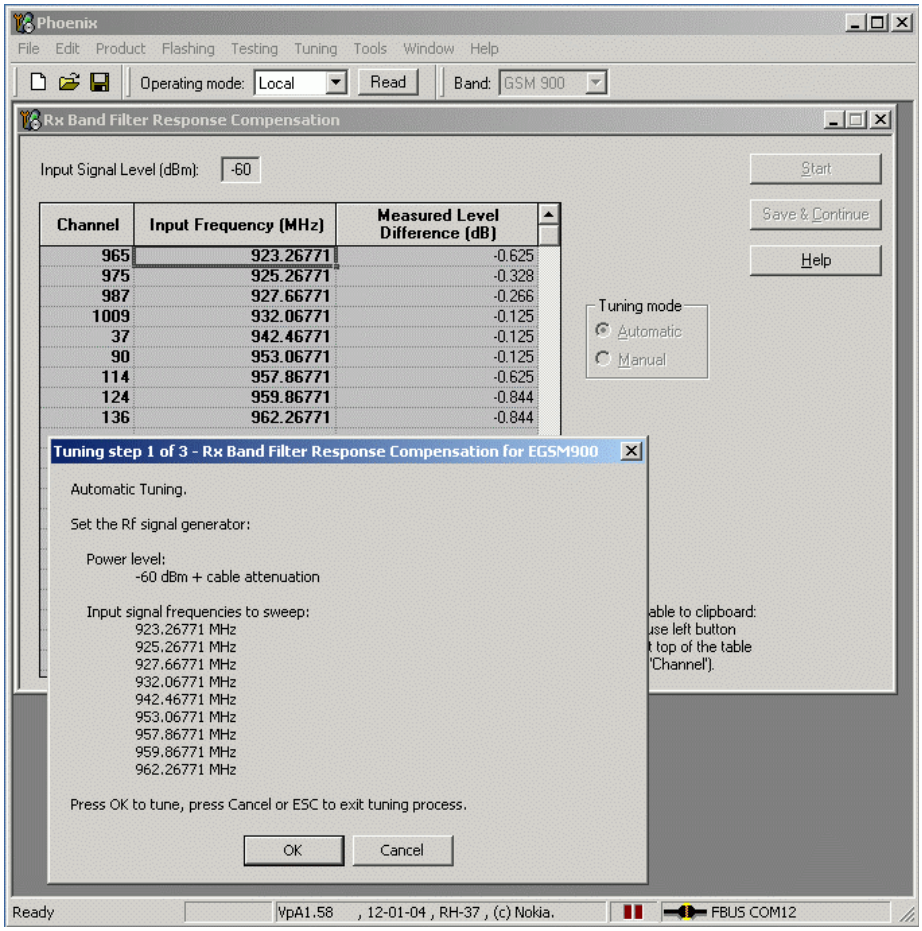
(The example below shows a screen shot in GSM900!)



Press **OK** for tuning.

The new tuning values are highlighted in the column <Measured Level Difference (dB)>.

Note the limits as specified in the table below.

Press **Save & Continue**

Tune the band filters and save its compensation values to the phone memory for each GSM band as described above.

Limits:

The tuned values <Measured Level Difference (dB)> shall not exceed the low and high limits as specified in the table below.

The typical value in the middle of each GSM band shall be approx. 0 dB, if <Rx Calibration> was made correctly in the calibration procedure before.

Channel Number (as indicated in the < Rx Band Filter Response Compensation > window)				Limits (of < Measured Level Difference >)	
Meas. point	**GSM900**	**GSM1800**	**GSM1900**	**Low**	**High**
First	965	497	497	-6.0 dB	+2.0 dB
N1	975	512	512	-3.0 dB	+2.0 dB
N2	987	535	537	-3.0 dB	+2.0 dB
N3	1009	606	586	-3.0 dB	+2.0 dB
N4	37	700	661	-2.0 dB	+2.0 dB
N5	90	791	736	-3.0 dB	+2.0 dB
N6	114	870	794	-3.0 dB	+2.0 dB
N7	124	885	810	-3.0 dB	+2.0 dB
Last	136	908	835	-6.0 dB	+2.0 dB

RX channel select filter calibration

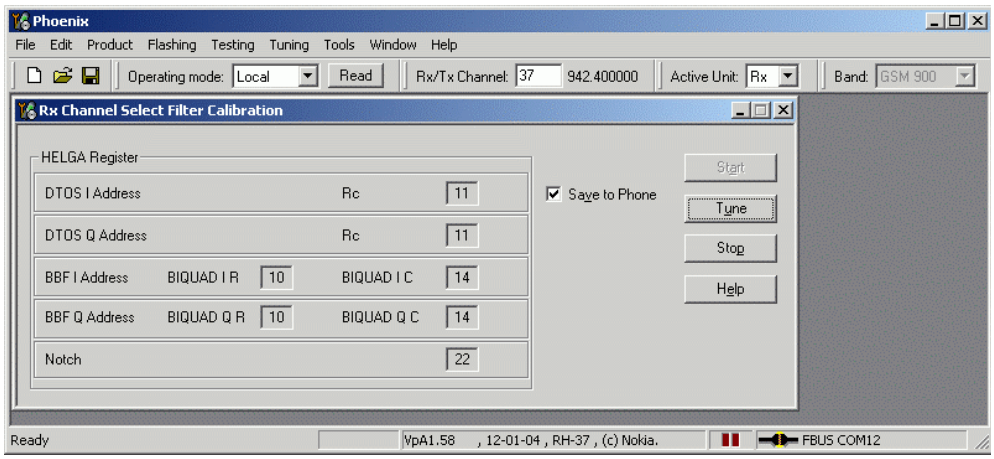
In the following, the calibration of the Rx channel select filter (BB-filter) inside the FR-ASIC is described. It is performed by internal measuring of a proto-type filter. For this reason, the calibration has to be done only once. No RF signal generator is needed. No GSM band has to be selected in Phoenix.

Rx channel select filter calibration is always the first tuning in the tuning sequence.

Set the operating mode to local mode.

Select Tuning Alt-U
Rx Channel Select Filter Calibration Alt-H

The setup should now look like this:



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The notch value might not be displayed in later Phoenix versions.

Press **Tune** and the optimal values are found.

Press **Stop**, the values are saved to the phone and the calibration has finished.

The results must fulfill the following limits:

Calibration value / Test case	Typical	Low limit	High limit
DTOS I Address Rc / check rx baseband filter DTOS_I [DAC]	13	-6	+37
DTOS Q Address Rc / check rx baseband filter DTOS_Q [DAC]	13	-6	+37
BBF I Address BIQUAD I R / check rx baseband filter BIQUAD_IR [DAC]	13	-6	+37
BBF I Address BIQUAD I C / check rx baseband filter BIQUAD_IC [DAC]	13	-6	+37
BBF Q Address BIQUAD Q R / check rx baseband filter BIQUAD_QR [DAC]	21	-6	+37
BBF Q Address BIQUAD Q C / check rx baseband filter BIQUAD_QC [DAC]	21	-6	+37
Notch / check rx baseband filter NOTCH _ [DAC]	24	-6	+37

Note: In later Phoenix versions the notch calibration might not be applicable anymore.

TX power level tuning

RH-37 supports GMSK and EDGE mode for the Power amplifier. Therefore, the power level tuning must be carried out for both modes in each band.

It is strongly recommended to use the **Phoenix <Auto-Tune>** capability. The functionality of it is described in chapter **"Fully automatic Calibration, Tuning & Measurement by Phoenix <Auto-Tune>"**.

It is strongly recommended to use TXP as external trigger for all TX tunings. External triggering gives the following advantages:

- trigger for spectrum analyzer (gated sweep)
- trigger for oscilloscope
- trigger for power meter (avoid exchanging of attenuator and getting better accuracy in power measurements)

Nevertheless, manual tuning is described below. It has to be carried out in all three bands and both modes (EDGE and GMSK).

Note: TX Power Tuning must be done with a peak power meter, e.g. Anritsu model ML2408A with Anritsu Peak Power Sensor MA2442A and a suitable attenuator.

The use of the built-in power meter of GSM testers is likely to cause larger errors than the use of a dedicated power meter and might cause miss tuning so that the phone might be not compliant with the GSM specifications.

Set power supply voltage Vcc = 3.6V !

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Tx power level tuning GSM900 in GMSK mode

Tuning of GSM850 and GSM900 work in the same manner, only band settings are different.

Set the operating mode to local mode.

Select Tuning

TX Power Level Tuning

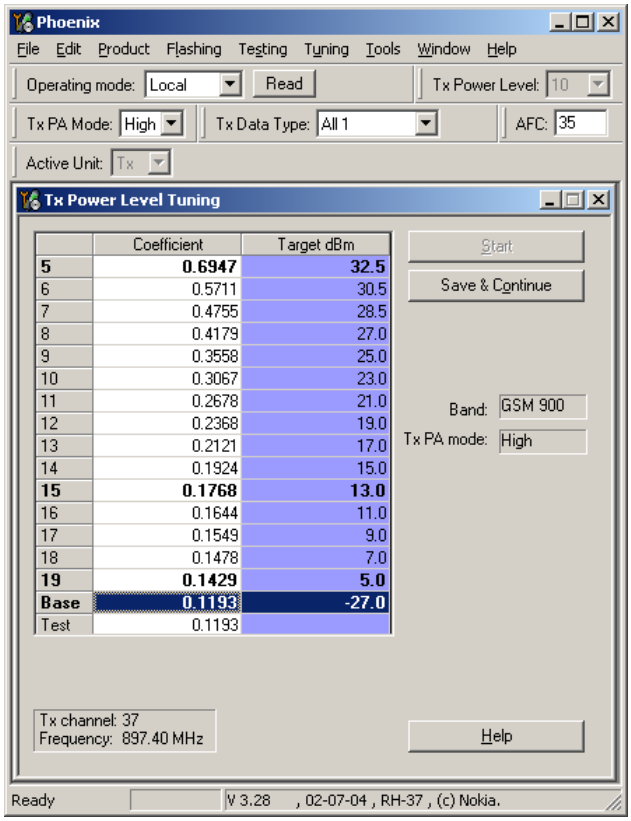
Wait until the TX Power Level Tuning window is popped up.

Connect a **calibrated** power meter to the RF connector of the phone.

Press <Start>

On the popped up window press ok

The setup should now look like this:



Adjust DAC Values for all power levels according to the target values:

TX PA Mode	Power level	Target power (dBm)
High	5	32.5
	15	13
	19	5
	Base level	-27

The power levels may differ from the target power levels mentioned in Phoenix.

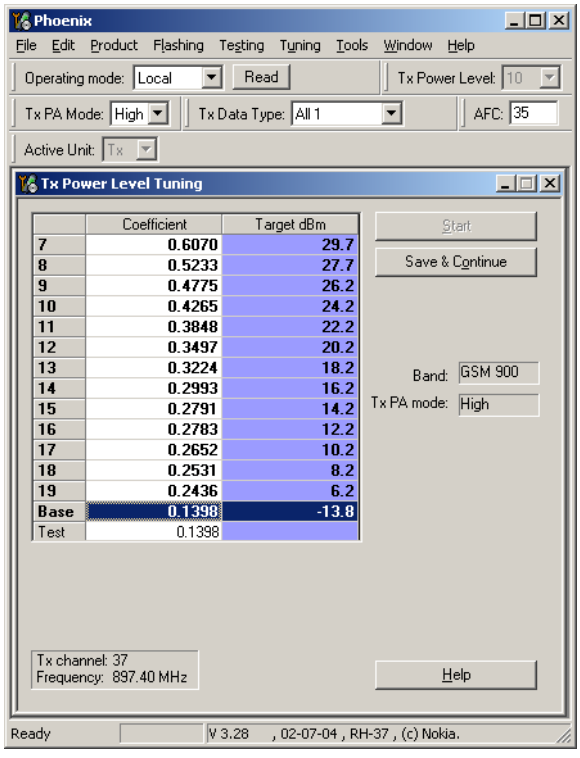
Make sure that the output power for Power Level 5 is equal or lower than 1dB below the saturation output power. Determine the saturation power by setting the DAC value to its maximum, for example, adjust the DAC Value to 32.3dBm for Power Level 5 if the saturation output power is only 33.3dBm.

Check if all levels match the target values, correct if necessary and then press < Save & Continue >.

Tx power level tuning GSM900 in EDGE mode

On the popped up window press ok.

The setup should now look like this:



Adjust DAC Values for all power levels according to the target values.

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Check if all levels match the target values, correct if necessary and then press <Save&tContinue>.

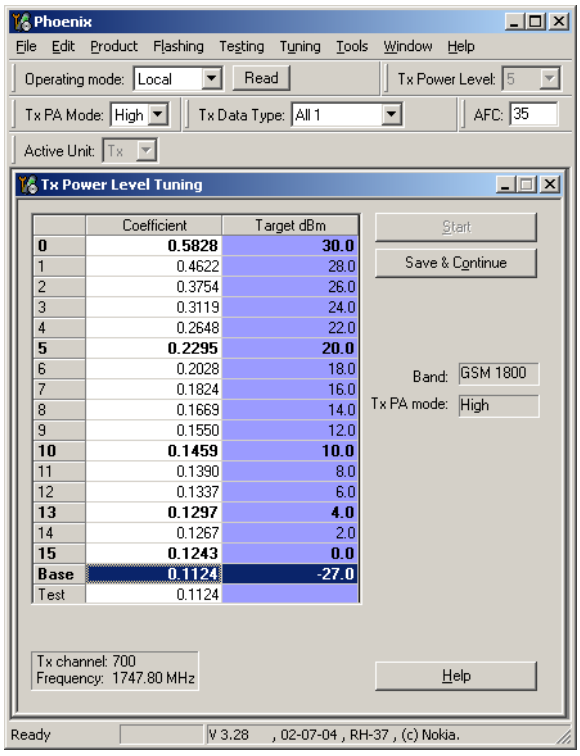
Note: For Phones with RFMD power amplifier also the EDGE power level 7 needs to be tuned. The window (like shown above) will pop up accordingly.

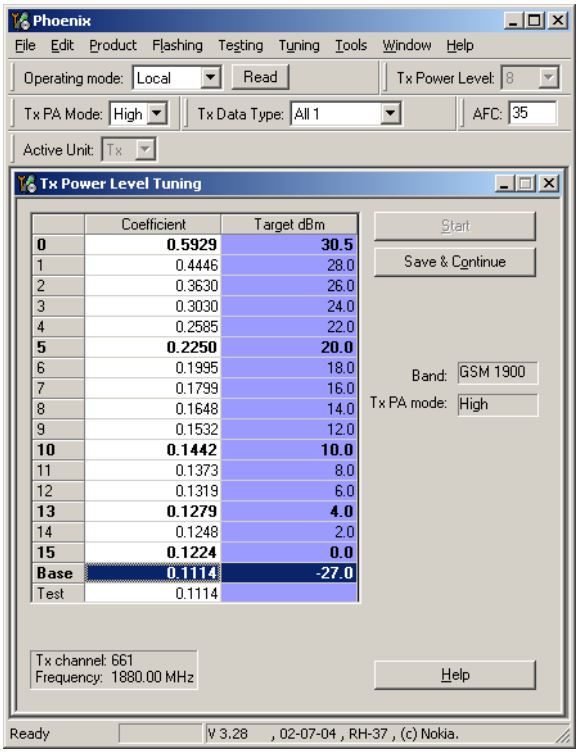
Tx power level tuning GSM1800 & GSM1900 in GMSK mode

On the popped up window, press ok.

Tuning of GSM1800 and GSM1900 work in the same manner, after calibrating the 1800 MHz band, you start calibrating the 1900 MHz band.

The setup should now look like this:





Adjust DAC Values for all power levels according to the target values:

Power level	Power (dBm)
0	30
11	8
15	0
Base level	-27

The power levels may differ from the target levels mentioned. Make sure that the output power for Power Level 0 is equal or lower than 1dB below the saturation output power. Determine the saturation power by setting the DAC Value to its maximum, for example, adjust the DAC Value to 29.7dBm for Power Level 0 if the saturation output power is only 30.7dBm.

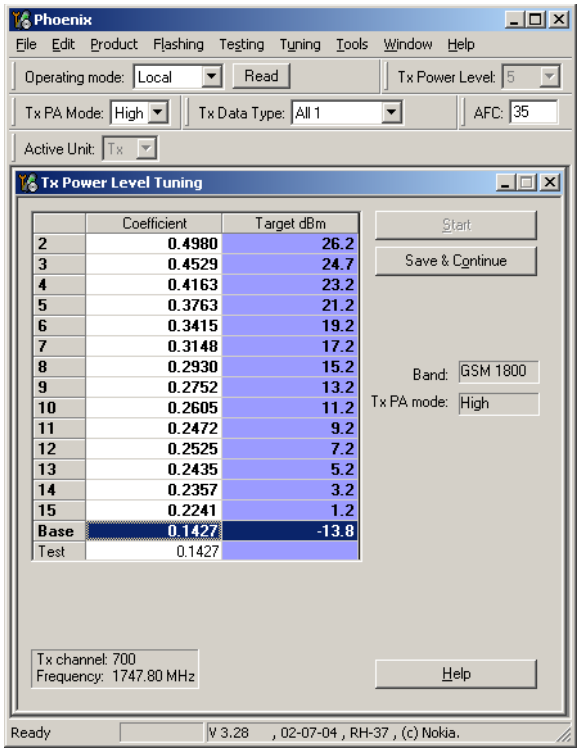
Due to high gain slope, you have to ensure, that especially the lower power levels meet the target values and correct them if needed.

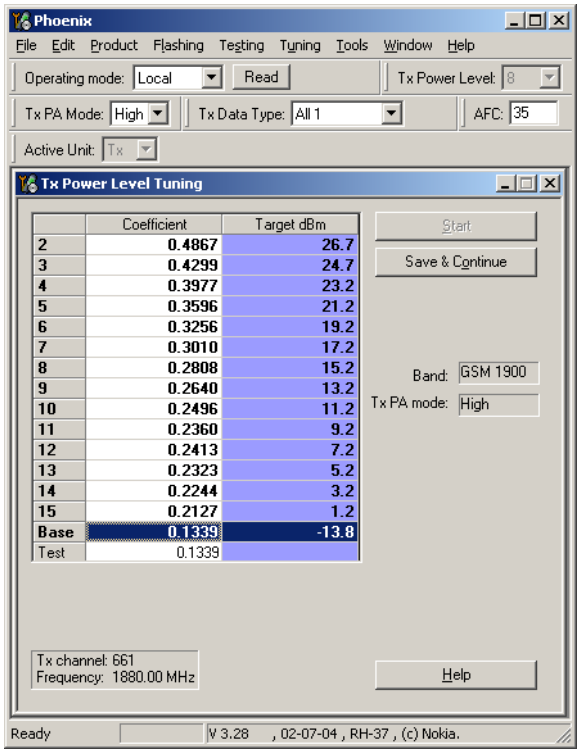
Check if all levels match the target values, correct if necessary and then press < Save & Continue >.

Tx power level tuning GSM1800 & GSM1900 in EDGE mode

On the popped up window, press ok.

The setup should now look like this:





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Adjust DAC Values for all power levels according to the target values.

Check if all levels match the target values, correct if necessary and then press < Save & Continue >.

Proceed with the 1900 MHz band.

TX I/Q tuning

This tuning must be performed in all three bands in GMSK mode and in EDGE mode.

The tuning is carried out exactly the same way in each band and is therefore described only once.

It is strongly recommended to use TXP as external trigger for all TX tunings. External triggering gives the following advantages:

- trigger for spectrum analyzer (gated sweep)
- trigger for oscilloscope
- trigger for power meter (avoid exchanging of attenuator and getting better accuracy)

Note: During Tx I/Q Tuning in GSM 900 band, an additional calibration value for the battery voltage A/D converter is taken. Therefore, it is important to set the operating voltage to 3.6V for this alignment (and use highest PL).

Ensure that I/Q tuning in GSM 900 band is executed as last I/Q-tuning (every I/Q-tuning overwrites the calibration for the battery voltage).

The VBAT value is detected and saved to PM.

PC/Phone operation:

Set operating mode to Local Mode.

Set supply voltage to 3.6V.

Select Tuning T

TX IQ Tuning I

Wait until the TX IQ Tuning window pops up and press <Start>.

On the popped up window, press ok

Open a second window following the instructions below:

Select Testing

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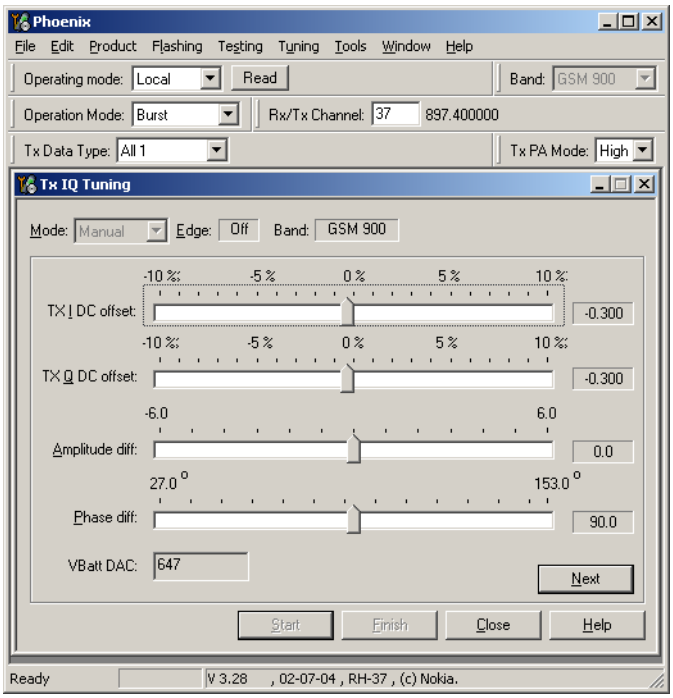
Select	RF Controls	
	Operation Mode	Burst
	RX/TX Channel	37
	TX Data Type	All1
	TX Power Level	5

The setup should now look like this:



Note: Dependent on the Phoenix version also VBAT value is not displayed

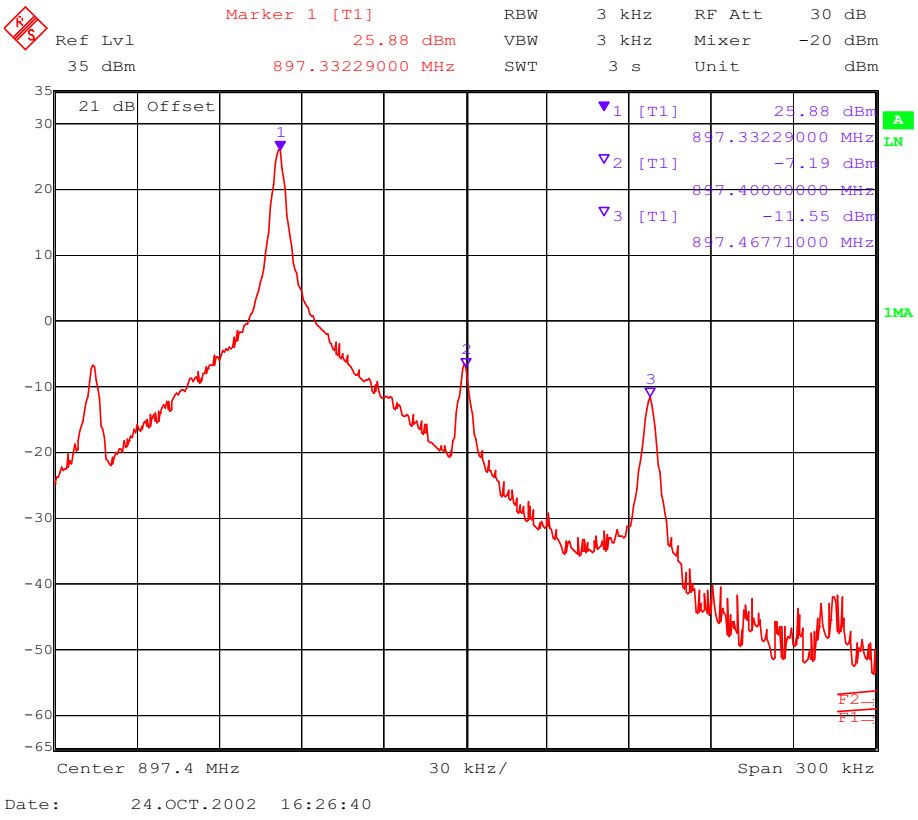
The power levels during TxIQ are adjusted automatically. An explicit selection of power level with RfControls is not necessary.

Connect a spectrum analyzer or GSM tester with the option 'Narrow Spectrum' to the antenna pads of the phone.

If a spectrum analyzer is used, make the following settings.

	GSM900
Center Frequency	897.4 MHz
Frequency Span	300 kHz
Resolution Bandwidth	3kHz
Video Bandwidth	3kHz
Sweep Time	100 msec.
Sweep Type	Clear/Write
Detector Type	Max Peak
Reference level	35 dBm
Marker 1	897.33229 MHz
Marker 2	897.4 MHz
Marker 3	897.46771 MHz

The spectrum analyzer now shows a plot like this:



The purpose of this alignment is to tune the carrier signal (at marker 2) and the +67kHz signal (at marker 3) to a minimum level.

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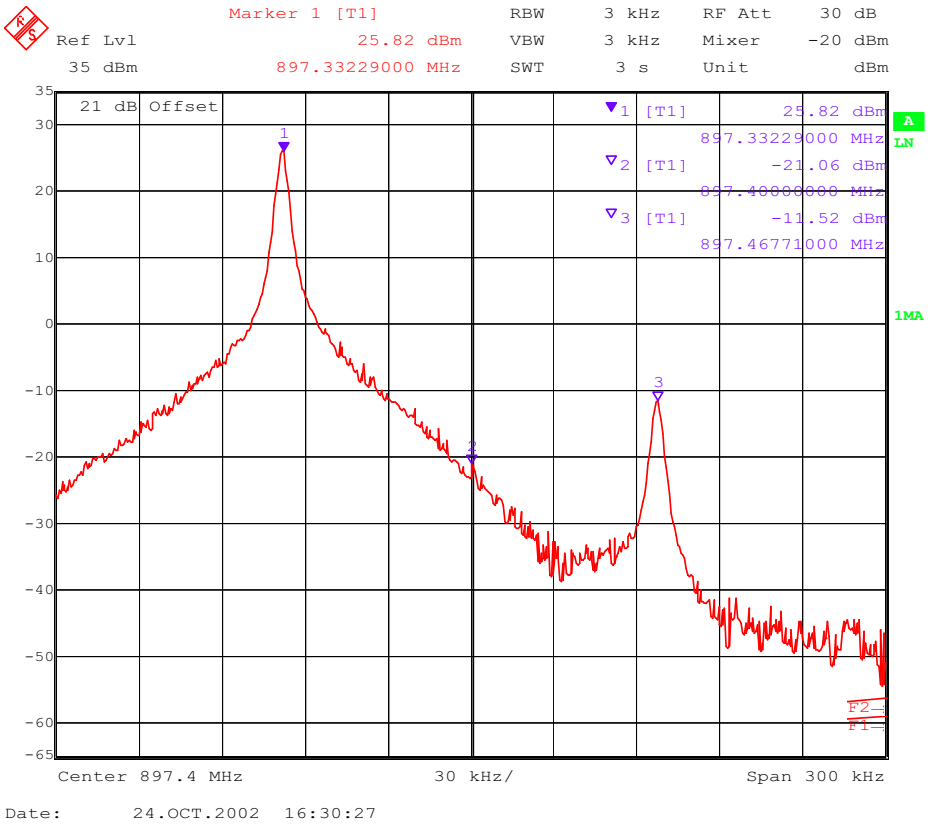
Use the variables 'TX I DC offset' and 'TX Q DC offset' to adjust the carrier signal to a minimum level (marker 2). Tuning can be performed by using arrow keys on the keyboard. Pushing the sliders by using the mouse is less sensitive however possible.

After tuning to the minimum the level difference between marker 2 and the peak levels at marker 1 must exceed 40dB.

The spectrum analyzer now shows a plot like this:



Use the variables 'Amplitude difference' and 'Phase difference' to adjust the +67kHz signal to a minimum level (Marker 3). Tuning can be performed by using the arrow keys on the keyboard. Pushing the sliders by using the mouse is less sensitive however possible.

After tuning to the minimum, the level difference between marker 3 and the peak level at marker 1 must exceed 40dB.

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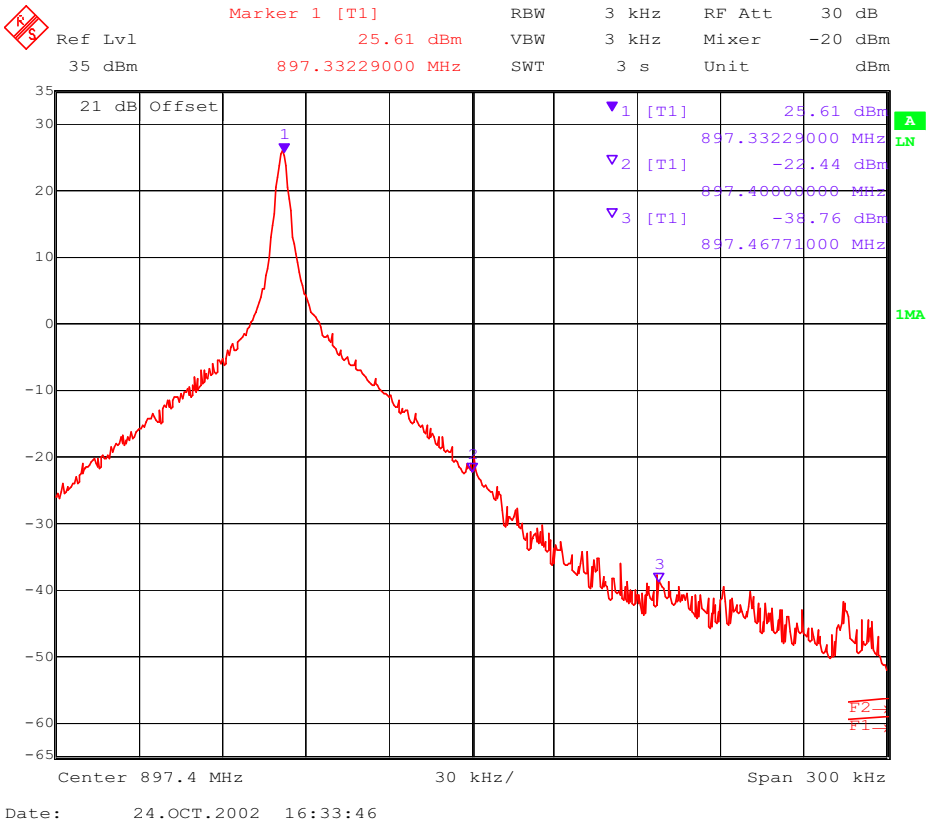
The spectrum analyzer now shows a plot like this:



Compare the results in the TX IQ Tuning Window with the limits below:

Value	Typical	Limit min.	Limit max.
TX I DC offset	0.1	-6	6
TX Q DC offset	0	-6	6
Amplitude difference	0	-1	1
Phase difference	87.5	80	100

Repeat the IQ tuning for all bands and for all modes by following the instructions from Phoenix IQ tuning. Always use the highest power level, otherwise a wrong Vbat value will be stored in the phone memory.

Note: The optimum values for <TX I and Q Offset> and <Amplitude and Phase Difference> vary from phone to phone.

Please be aware, that the frequency deviation in EDGE mode is 50 kHz, due to the 3 pi / 8 EDGE modulation.

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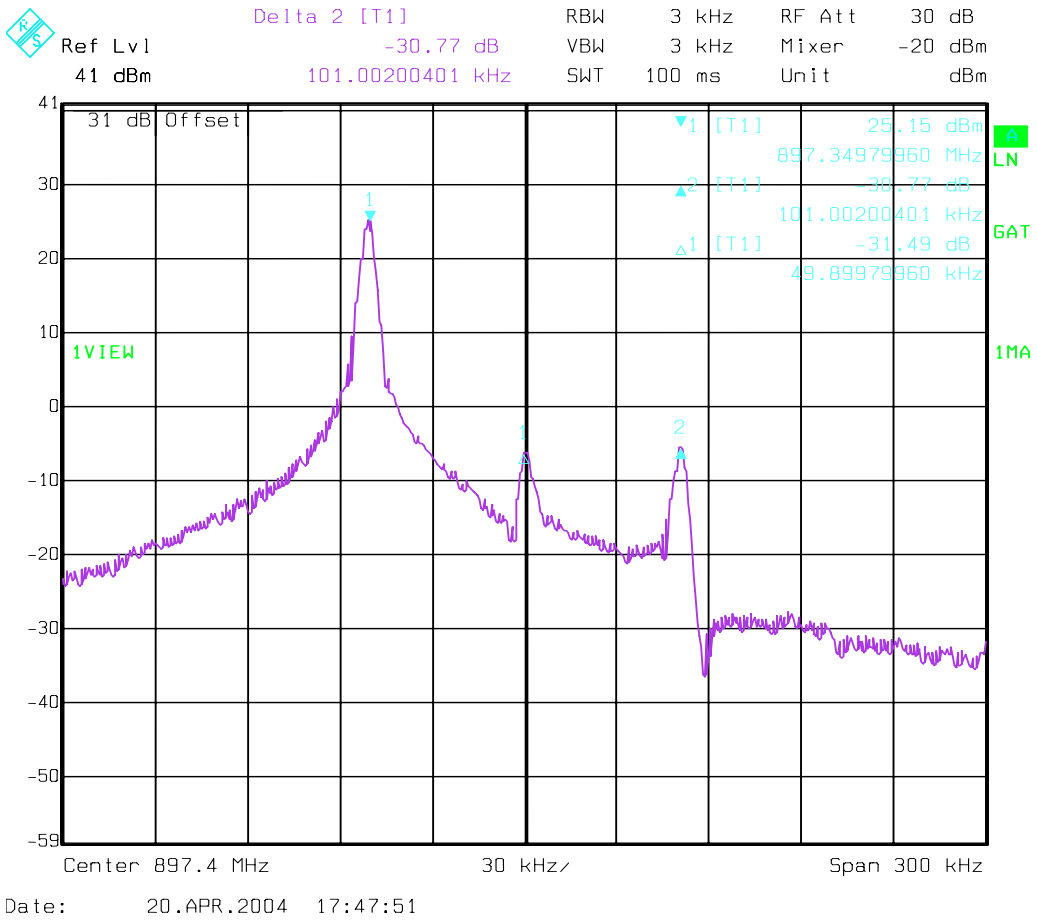
Here you can see an example:



Fully automatic calibration, tuning & measurement by Phoenix <Auto-Tune>

Auto-tune is designed to align the phone' s RF part easier and faster, it calibrates, tunes, measures the following:

- Rx channel select filter calibration
- Rx calibration
- RX band filter response compensation
- Tx power level tuning
- Tx I/Q tuning

and saves the results in a log-file, if wanted.

Autotune is a very user-friendly feature, which allows automatic tuning. Preconditions are:

- Usage of CMU200

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- Usage of XRF-1 cable
- Usage of the jig MJ-22

There is no need to adjust any value, since all values are correctly pre-defined in the proper file delivered with the install-packages

Preparations for Phoenix

Follow the instructions as described in chapter General instructions for tuning.

Compensation of cable and jig loses

Measure the losses of the feeding cable(s) between the phone and the Radio Communication Tester respective the network consisting of RF generator and signal analyzer. The set up of the measurement equipment and its cabling are shown in the HELP program <Environment>.

If a separate RF generator and a separate RF analyser is used, a power splitter is needed which causes higher cable losses. Therefore, the cable losses need to be set via SetLoss. In CCS Phoenix this is not possible with a PKD-1 dongle, but with a PKD-1CS dongle.

Follow the path: Tuning → Auto-Tune → Help → Environment

Note: Only the proposed measurement equipment listed in <Environment> is supported.

Selecting measurement equipment:

- one Tx and one Rx measurement equipment each from the Tx and Rx lists

  or

- one from the Rx/Tx list (only Rohde & Schwarz CMU 200 currently supported)

No mixing of the equipment from the lists [Rx/Tx] and [Tx or Rx] is allowed. This means the use of CMU 200 allows no other measurement equipment!

The discrete frequencies for loss determinations are defined in the sub-program <set loss>.

Note: <set loss> is accessible with the dongle type PKD-1CS.

Select	Tuning	Alt-U
	Set loss	Alt-O

The window <Set loss> pops up with the register card <Cable>.

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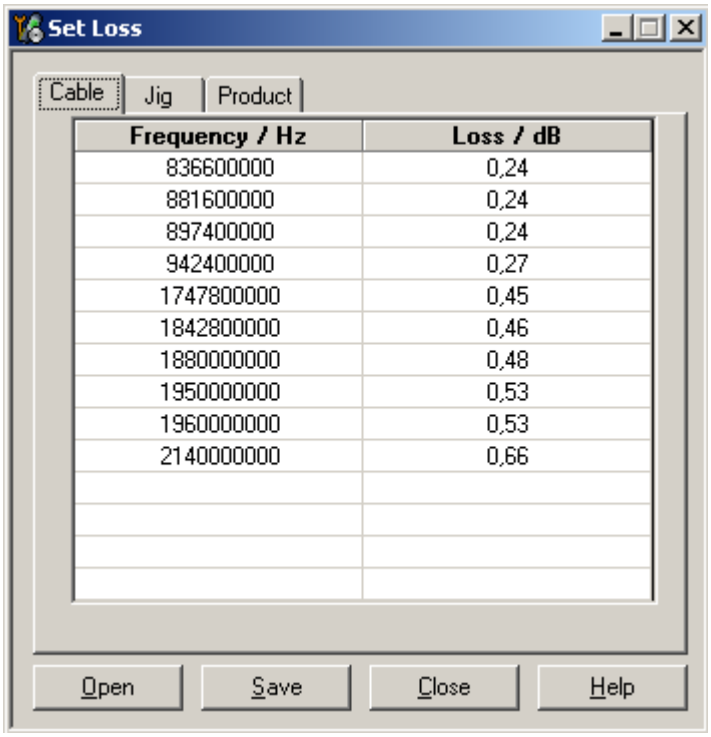
Edit the column <Loss/dB>.



Note: Jig and product are pre-defined.

GPIB interface

The GPIB card shall be labeled by National Instruments or at least compatible with their products.

Drivers must be installed and card <accepted> by Phoenix. The following procedure has to be made once for <acceptance> :

Select	Tools	Alt-T
	Options	Alt-O
	GPIB card	Alt-G

The window <GPIB Card> pops up.

Select	Card Type:	NI

Press **Start** and wait until the <listeners> (radio communication tester) are identified, then press **Close**.

The identification may take a few minutes.

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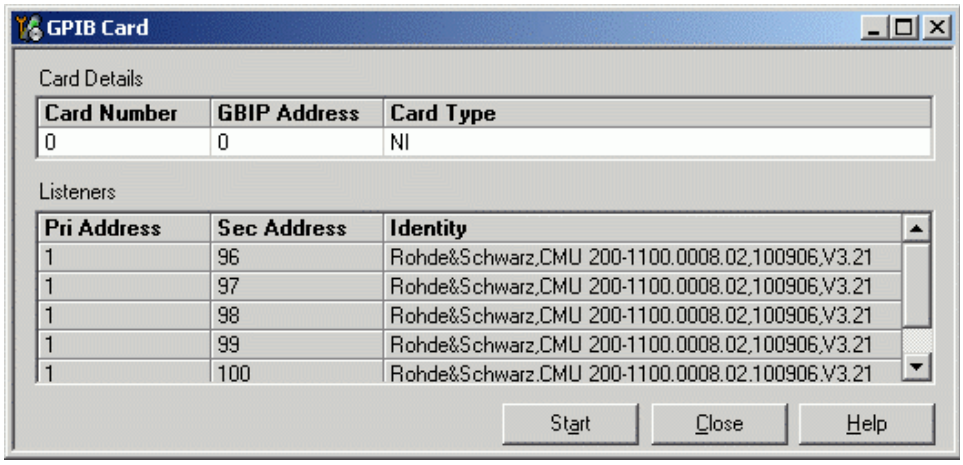
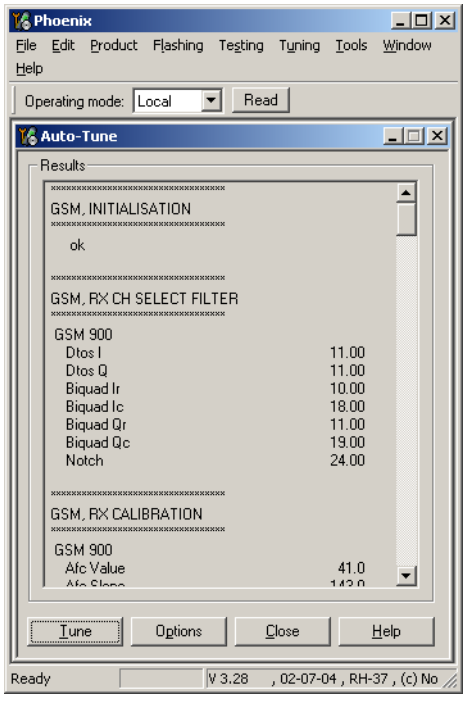
The set up should now look like this:



Automatic tuning procedure

Select	Tuning	Alt-U
	Auto-Tune	Alt-A
	Tune	Alt-T

The <Auto-Tune> results are displayed as follows:



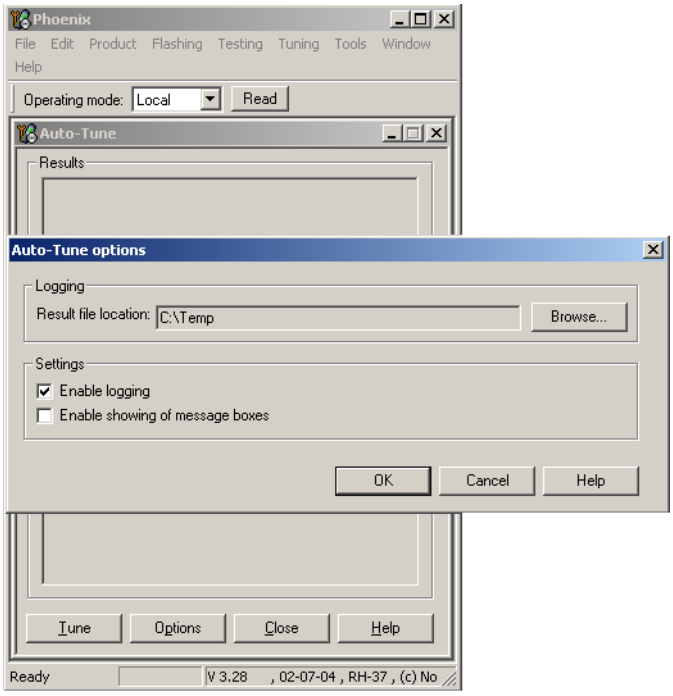
The result values are logged in a result-file, if initiated according to the following chapter.

Log file

To enable the creation of a log file for saving the calibration, tuning and measurement results

Select	Tuning	Alt-U
	Auto-Tune	Alt-A
	Auto-Tune options	Alt-O

Press the button <Enable/Disable logging> ON and select the path of the result file.



Phone book downloading

Within the test mode it is not possible to download the ME phone book, if a SIM is inserted. It works fine in normal mode. Therefore, it is recommended to remove any SIM card (phone, module jig or docking station adapter) and ensure that normal mode is activated before the phone book downloading is started.

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